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June 12, 2009

Reference No. 027545-00

Mr. Kenny Jaynes Chief, Compliance Section U.S. Army Corps of Engineers Galveston District Regulatory Branch P.O. Box 1229 Galveston, Texas 77553-1229

Dear Mr. Jaynes:

Re:

Wetland Delineation Data Report Star Lake Canal Superfund Site

Port Neches, Jefferson County, Texas

Conestoga-Rovers & Associates (CRA), on behalf of Chevron Environmental Management Company (CEMC) and Huntsman Petrochemical Company (Huntsman), submits herein to the Galveston District, U.S. Army Corps of Engineers (USACE) the Wetland Delineation Data Report for the Star Lake Canal Superfund Site located in Jefferson County, Texas (Site). The U.S. Environmental Protection Agency (EPA) entered into an Administrative Settlement Agreement and Order on Consent (AOC) for Remedial Investigation/Feasibility Study (RI/FS) (CERCLA Docket No. 06-02-06) with CEMC and Huntsman for the Site in December 2005.

This Report is a presentation of data on wetlands potentially under the jurisdiction of the USACE at a portion of the Site that is currently under investigation as part of the RI/FS. This report is provided to inform your office that contractors working on behalf of CEMC and Huntsman plan to clear limited amounts of wooded areas in and near wetlands with the use of mechanized equipment at the Site.

Should you have any questions or require additional information regarding this submittal, please contact CRA or Mr. Gary Jacobson at (713) 432-2636.

Yours truly,

CONESTOGA ROVERS & ASSOCIATES

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DGM/lcs/1

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with Marchall



June 12, 2009

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Ref. No. 027545-00

Encl.

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WETLAND DELINEATION DATA REPORT

STAR LAKE CANAL SUPERFUND SITE PORT NECHES, JEFFERSON COUNTY, TEXAS

Prepared For:

Chevron Environmental Management Company 4800 Fournace Place, E 534A Bellaire, Texas 77401

JUNE 2009 REF. NO. 027545-00 (12)

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1.0 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC) and Huntsman Petrochemical Corporation (Huntsman), Conestoga-Rovers & Associates, Inc. (CRA) submits herein to the Galveston District of U.S. Army Corps of Engineers (USACE) a Wetland Delineation Data Report (Report) for a portion of the Star Lake Canal Superfund Site (Site) near Port Neches, Jefferson County, Texas. The U.S. Environmental Protection Agency (EPA) entered into an Administrative Settlement Agreement and Order on Consent (AOC) for Remedial Investigation/Feasibility Study (RI/FS) (CERCLA Docket No. 06-02-06) with CEMC and Huntsman for the Site in December 2005. CRA and ENTRIX, Inc. (ENTRIX) provide technical services to CEMC and Huntsman for the Site. This Report is a presentation of data on wetlands potentially under the jurisdiction of the USACE at a portion of the Site that is currently under investigation as part of the RI/FS.

The Site consists of Star Lake Canal, Jefferson Canal, Gulf States Utilities Canal, Molasses Bayou, and the adjacent wetland areas. The Site is defined in the AOC as the lengths of the two industrial canals from their origins to the confluence of Star Lake Canal and the Neches River and the adjacent wetlands. The Site is located in Jefferson County, Texas, in and around the cities of Port Neches and Groves.

This objective of this Report is to present field data on the three diagnostic characteristics of wetlands, field data on the characteristics of tributaries to traditional navigable waters of the United States, an opinion on the presence and potential extent of wetlands, and an opinion on USACE jurisdiction. This report was prepared in accordance with guidance found in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Army Engineer Waterways Experiment Station 1987), the *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region* (U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (U.S. Army Corps of Engineers and U.S. Environmental Protection Agency 2007).

2.0 BACKGROUND

Wetlands are defined in federal regulations as, "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." For property to be considered wetlands under the jurisdiction of the USACE, it must have a hydrophytic plant community,

hydric soils, saturation in the root zone of plants for at least 5 percent of the growing season in consecutive days; and must be adjacent to, hydrologically connected to, or have a significant nexus with traditional navigable waters. Each of these characteristics will be described for the area delineated.

In approximately February 1983, the Jefferson County Drainage District Number 7 (DD #7) dredged Jefferson Canal by dragline after acquiring an easement on the canal from Texaco Chemical Company (TCC). The DD #7 deposited dredged materials onto the banks of Jefferson Canal in and around an area south of FM Road 366. The deposited dredged spoil material was subsequently determined to contain potentially hazardous constituents.

The RI work planned for the Jefferson Canal spoil pile area includes evaluation of the spoil piles and determination of the feasibility of long-term remedial action. Prior to evaluation of the spoil piles, vegetation removal is required. The spoil piles along Jefferson Canal are currently covered with dense vegetation. Removal of trees, brush, vegetation, and/or any surface obstructions is necessary to remove the hazards cited above and complete the necessary RI work. The Jefferson Canal spoil piles will be trimmed of vegetation and limited debris with the use of mechanical equipment. Any trees present will be trimmed and cut at the ground surface. The trees, brush and/or vegetation will be chipped and mulched into small pieces with the use of whole-tree chippers. These mulched materials will be spread on the ground surface for beneficial reuse at the completion of vegetation clearing activities. Any other surface or subsurface obstructions present in the spoil pile areas, such as concrete blocks, will also be removed, to the degree practical. A routine long-term maintenance program will be established to manage vegetative growth at the spoil piles throughout duration of the RI/FS activities. Topographic surveying and mapping will be completed by a licensed land surveyor to assist in the identification and surface delineation of the spoil piles. Following completion of the vegetation removal and topographic mapping, a work scope will be prepared that further outlines additional investigation that may be necessary to assess the nature and extent of impact within the piles, and the potential risk to human and ecological receptors.

Wetlands were delineated near the downstream portion of Jefferson Canal. This report will be provided to the Galveston District of the USACE, the EPA, and the trustees. As established by Regulatory Guidance Letter 85-07, issued by USACE Headquarters, and confirmed by subsequent Headquarters guidance, neither the State of Texas nor the EPA are required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act for actions taken at Sites under the authority of CERCLA.

3.0 WETLAND DELINEATION AREA

3.1 <u>LOCATION</u>

The Site is located near Port Neches, Texas, approximately 2 miles northwest of the interchange of Highway TX 366 and Highway TX 73, in Jefferson County. The wetland delineation area consists of portions of the Jefferson Canal Spoil Pile Area of Investigation (AOI) and the Jefferson Canal Downstream AOI at the Site. The geographic coordinates near the center of the area delineated are N 29° 57′ 54.6″, W 93° 55′ 5.6″. The area delineated is best accessed from the south roadside of a private drive west of Pine Top Road at the approximate geographic coordinates N 29° 58′ 0.1″, W 93° 55′ 4.2″. The center of the area delineated is approximately 0.16 mile south of Star Lake Canal and 3.7 miles west of Sabine Lake.

The Site is located between the two municipalities of Port Neches to the west and Groves to the south. Immediately to the north is an area of marsh associated with the floodplain of the Neches River, which flows in a southeasterly direction to Sabine Lake, approximately 4 miles to the east. The overall setting is within the Texas coastal plain, between developed areas to the south and west, and natural areas to the north and east.

A vicinity map that shows the location of the Site is included as Figure 1. Figure 2 shows the locations of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs and the area delineated.

3.2 DESCRIPTION

CRA delineated an area proposed for mechanized land clearing that includes portions of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs, shown on Figure 2. The spatial extent of the Jefferson Canal Spoil Pile AOI will be modified to include the area recently evaluated and identified to contain dredged spoils. The area delineated includes spoil piles, parts of nearby fallow fields, and a limited area of bottomland hardwoods. The area delineated is bordered to the east by a Jefferson Canal, to the west by pasture, to the south by the Kansas City Southern Railroad right-of-way, and to the north by a levee private access road to the Jefferson Canal pump station operated by the Jefferson County DD #7.

The area is vegetated by two distinct communities, an early successional bottomland hardwood forest and fallow agricultural field. The field is typical of upland pasture used primarily for grazing cattle, and supports upland grasses. Cattle were observed

foraging. The forested area, which includes the spoil piles, is densely vegetated in the understory and midstory by vines, shrubs, and saplings. The overstory is thin, with few mature trees.

The spoil piles are vegetated by an early successional bottomland hardwood forest and are densely vegetated in the understory and midstory. The crest of the spoil piles are approximately four feet above the surrounding terrain.

The topography gently slopes 2 to 5 degrees down to the northeast with approximately 10 feet of variance in elevation throughout the area delineated. A series of canals, levees, dams, and a pump station control the overall hydrology in the vicinity. The area delineated drains to the northeast towards Jefferson Canal, which joins with Star Lake Canal to the north and ultimately to the Neches River.

4.0 <u>FIELD SURVEY</u>

4.1 GENERAL

On March 8 and 9, 2009, CRA field personnel completed a field survey to inspect the proposed vegetation removal area. Nine surface soil samples were collected to characterize local habitat and determine wetland characteristics. Sample locations were chosen throughout the area to represent homogeneous areas and to help define wetland/non-wetland boundaries. At each sample location, dominant vegetative species were recorded, soil samples were collected and examined for identification and determination of hydric properties, and observations were made on hydrologic conditions. Photographs 1 through 9 show sample locations and portions of the area delineated (Appendix C). Data collected from the 9 sample locations are summarized on Routine Wetland Determination Data Forms attached in Appendix A. Sample locations are shown on Figure 2.

4.2 PRELIMINARY DESKTOP REVIEW

Prior to the field survey, CRA completed a preliminary review of available mapped information for the Site. Sources reviewed include the local Natural Resources Conservation Service (NRCS) soil survey, the NRCS Web Soil Survey, the USGS 7.5-minute topographic map "Port Neches, Texas," the National Wetlands Inventory map, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), Light Detection and Ranging (LIDAR) contour data, and recent aerial

photography. The National Wetlands Inventory map identifies freshwater forested/shrub wetlands adjacent to the east side, and an area of mixed freshwater forested/shrub and freshwater emergent wetlands to the west of the area delineated. Figure 3 shows National Wetlands Inventory map information for the area delineated. The FIRM (City of Port Neches, Texas, Jefferson County) shows that the area delineated is between the 100-year floodplain and the 500-year floodplain.

4.3 FIELD PERSONNEL

Field data were collected by Mr. Brandon Owens and Mr. Matt Brown of CRA, and Mr. John Williams of ENTRIX. Mr. Owens is a biologist with 5 years of experience performing wetland delineations and 6 years of experience identifying vegetation. Mr. Brown is a biologist with 1 year of experience performing wetland delineations and identifying vegetation. Mr. Williams is a biologist with 2 years of experience performing wetland delineations and 4 years of experience identifying vegetation. Data were reviewed by Mr. David Marschall, a wetland specialist with 30 years of experience working with the Section 404 regulatory program. Messrs. Owens, Brown, and Marschall have received qualification training for the Corps of Engineers Wetland Delineator Certification Program.

5.0 SITE-SPECIFIC DATA

5.1 SOILS

The NRCS Web Soil Survey shows that the area delineated may be underlain by Franeau clay, 0 to 1 percent slopes, and League-Urban land complex, 0 to 1 percent slopes. Samples were collected to approximately 20 inches below the soil surface. The depth of each sample was sufficient to determine changes in the upper horizons and to observe field indicators of hydric soil. Soil samples were described and compared to descriptions and maps in the soil survey. Figure 4 shows soils in the area of the Site as mapped by the USDA.

Field survey data generally agree with the soil survey. Observations indicate that the area delineated is underlain by League-Urban land complex, 0 to 1 percent slopes, on the eastern two-thirds, and Franeau clay, 0 to 1 percent slopes on the western third.

Soils of the League Series are nearly level clays found on the coastal prairie. They are somewhat poorly drained, exhibit very slow permeability and high runoff, and are listed

as hydric soils on the NRCS National Hydric Soils list. In the vicinity of the area delineated, they are found in association with Urban land, the name given to areas disturbed or manipulated to the extent that they have lost natural soil profiles or may be paved or covered by buildings. Disturbed profiles were observed throughout the area delineated, but particularly in and around the spoil piles. Despite the historical disturbance, indicators of hydric soils were observed in areas mapped as League-Urban land complex.

Franeau clay, 0 to 1 percent slopes, was observed on the western third of the area delineated, particularly in the fallow pasture. Franeau clay is listed as a non-hydric soil on the NRCS National Hydric Soils list.

5.2 VEGETATION

The wetland delineation area is vegetated by an early successional bottomland hardwood forest on and adjacent to the spoil piles, and fallow pasture between the spoil piles. The forest is densely vegetated in the understory and midstory. Dominant midstory species include poison sumac, hackberry, green ash, mulberry, black willow, Drummond red maple, and tallow. Dominant understory species include wild strawberry, green flat-sedge, soft rush, pepper vine, swamp mallow, wild onion, sawtooth blackberry, and southern dewberry. There are only a few mature sugarberry, green ash, and tallow. The non-forested areas support grasses and field species that are typical of a fallow pasture. The open fields are dominated by St. Augustine grass, dandelion, sweet pea, crow poison, horseflyweed, yellow sweet clover, and eastern pasqueflower.

The criterion for wetland vegetation was met at most sample locations in the young forest but not in the fields. Herbaceous wetland plants were absent from the spoil piles, as was wetland hydrology. However, despite the rise in elevation, woody hydrophytic plants were observed on the spoil piles likely due to the nearby seed sources.

5.3 HYDROLOGY

The landscape slopes gently to the northeast and appears to drain directly towards Jefferson Canal. Natural hydrology has been modified by levees and other embankments for flood control. With the exception of the spoil piles, primary indicators of wetland hydrology were observed within the wooded areas, including inundation, soil saturation in the upper 12 inches, water marks, drift lines, and drainage patterns in

wetlands. Secondary indicators of wetland hydrology observed include water-stained leaves and positive FAC-Neutral Tests. No wetland hydrology indicators were observed in the open fields.

5.4 WATERS OF THE UNITED STATES

Jefferson Canal is a first-order tributary of the Neches River, which is a traditional navigable water (TNW) of the United States. Jefferson Canal outfalls into Star Lake Canal. This canal is a relatively permanent water (RPW), and in the opinion of CRA and ENTRIX will fall under USACE jurisdiction. Data on Jefferson Canal is presented on Approved Jurisdictional Determination Form in Appendix B.

6.0 RESULTS

Data were gathered and observations were made in portions of the Jefferson Canal Spoil Pile and Jefferson Canal Downstream AOIs at the Star Lake Canal Superfund Site in Jefferson County, Texas. Conditions were documented at 9 sample locations. The findings include:

- <u>Soils</u>: The area delineated was observed to be entirely underlain by Franeau clay and soils of the League-Urban land Complex. Most soil profiles had inclusions of spoil from the excavation of Jefferson Canal. Franeau clay, 0 to 1 percent slopes, is a non-hydric soil and was observed in open fields. Soils of the League-Urban land complex, 0 to 1 percent slopes, were observed in the wooded areas. League clay is a hydric soil that occurs next to two spoil piles. The spoil material does not have a normal soil profile, and does not exhibit hydric properties.
- <u>Vegetation</u>: Forested areas, including the spoil piles, are dominated by wetland vegetation. Open pasture within the delineation area is dominated by upland grasses and forbs.
- <u>Hydrology</u>: Primary and secondary indicators of wetland hydrology were observed predominantly in the wooded areas, but not on the spoil piles. Wetland hydrology indicators were not observed in the open fields.
- <u>Waters of the United States</u>: There is one tributary of the Neches River within the area delineated. The body of water is observed to be relatively permanent water.

7.0 SUMMARY

Positive evidence of the diagnostic characteristics of wetlands was found at 6 of the 9 sample locations across the wetland delineation area. Approximately 5.5 acres appear to meet the technical criteria for wetlands based on guidance in the *Corps of Engineers Wetlands Delineation Manual*. Based on the adjacency of relatively permanent waters and traditional navigable waters, it is the opinion of CRA and ENTRIX that these wetlands would likely be considered jurisdictional by the Galveston District of the USACE. This Report serves as a notification of the planned Site activities as a permit is not required for proposed work in wetland areas at the Site. During the course of the planned RI/FS activities, impacts to wetlands at the Site will be minimized to the extent practical. Figure 2 shows shaded areas that indicate potential jurisdictional wetlands identified within the area delineated.

8.0 REFERENCES

- Environmental Laboratory, *Corps of Engineers Wetlands Delineation Manual*, U.S. Army Engineer Waterways Experiment Station, 1987.
- Environmental Laboratory, Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, U.S. Army Corps of Engineers Wetlands Regulatory Assistance Program, October 2008.
- Federal Insurance Administration, Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map, "City of Port Neches, Texas, Jefferson County," Community-Panel Number 485500 0005D, January 1983.
- National Cooperative Soil Survey, Web Soil Survey (websoilsurvey.nrcs.usda.gov). U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C. 2008
- Soil Conservation Service, *Soil Survey of Jefferson County, Texas*, U.S. Department of Agriculture, 1977.
- U.S. Fish and Wildlife Service, *National List of Plant Species That Occur in Wetlands: South Plains (Region 6)*, U.S. Department of Interior, 1988.
- U.S. Fish and Wildlife Service, National Wetlands Inventory, web mapping.

U.S. Geological Survey, 7.5-Minute Series Topographic Map "Port Neches, Texas," U.S. Department of Interior, 1992.

U.S. Geological Survey, 7.5-Minute Series Topographic Map "Port Neches, Texas," U.S. Department of Interior, 1995.

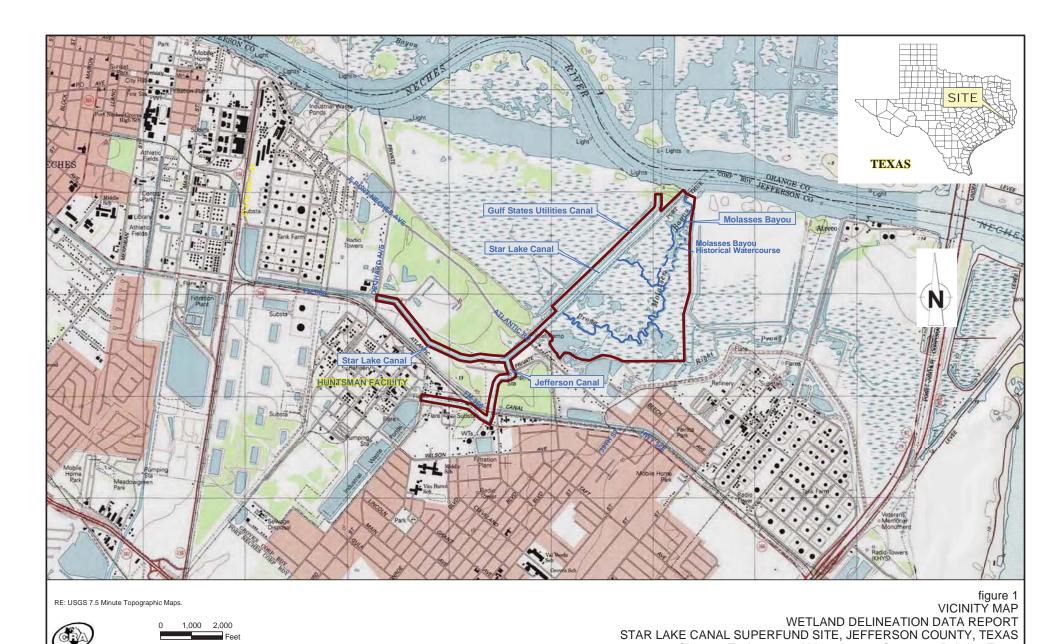
Should you have any questions or require additional information regarding this submittal, please contact the undersigned.

All of Which is Respectfully Submitted, CONESTOGA-ROVERS & ASSOCIATES

Campbell, PhD 6/11/09

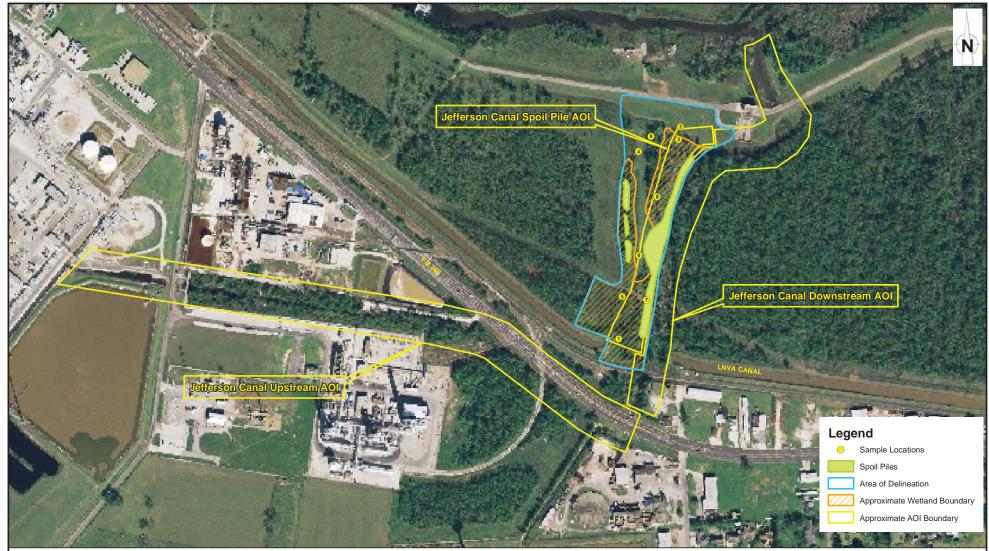
Texas PE 76931

FIGURES



Chevron Environmental Management Company, Bellaire, Texas

27545-00(012)PR-BR001 MAY 28/2009



RE: AERIAL PHOTOGRAPH OBTAINED FROM CHEVRON PIPELINE, DATED NOVEMBER 2005.



figure 2 WETLAND DELINEATION AREA WETLAND DELINEATION DATA REPORT STAR LAKE CANAL SUPERFUND SITE, JEFFERSON COUNTY, TEXAS Chevron Environmental Management Company, Bellaire, Texas

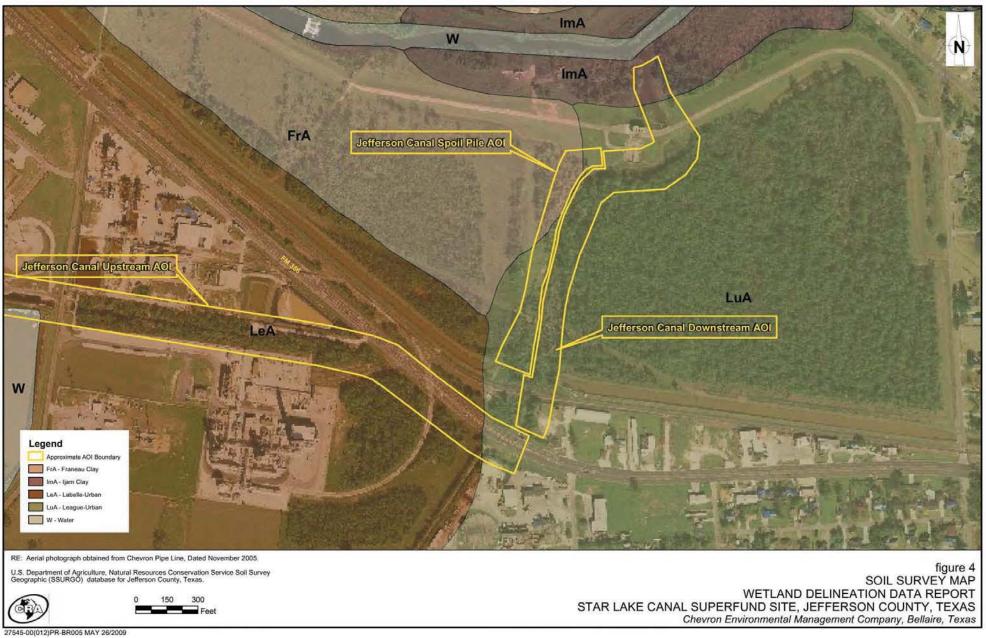


U. S. Fish and Wildlife Service. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/nwi/.





figure 3 NATIONAL WETLANDS INVENTORY MAP WETLAND DELINEATION DATA REPORT STAR LAKE CANAL SUPERFUND SITE, JEFFERSON COUNTY, TEXAS
Chevron Environmental Management Company, Bellaire, Texas



APPENDIX A

ROUTINE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Superfund	Site / Jeffers	on Canal	City/County:	Port N	leches	/ Jeff	erson	Sampling Date:	04/08/0	9
Applicant/Owner:	Chevron Er	nvironmenta	Management Company					State:	TX	Sampling Point:	1	
Investigator(s):	Brandon L	Owens / I	Matt D. Br	own	Section, Township	, Range	e:					
Landform (hillslope	e, terrace, etc.): Drair	nage Basi	n	Local relief (conca	ave, con	vex, none	e):	Slope		Slope (%):	2
Subregion (LRR or	MLRA):	LRR T	La	ıt: N 29°	57' 48.11"		Long:	W 93°	55' 06.87	" Datum:	WGS84	ļ
Soil Map Unit Nam	ie: <u>Lea</u>	gue-Urban	land com	plex				Ν	IWI Class	ification:		
Are climate/hydrolo	ogic condtions	on the site ty	pical for this	time of y	ear?	Yes	X	No	(If no, explain in Re	marks)	
Are Vegetation	N Soil	N or Hyd	drology N	signific	cantly disturbed?	Are "	Normal C	Circum	stances"	oresent? Yes	X No	
Are Vegetation	N Soil	N or Hyd	drology N	natura	Ily problematic?	(If ı	needed, (explair	any ans	wers in Remarks.)		
SUMMARY OF	FINDING	S - Attach	site map	showin	g sampling po	int loc	ations	, tran	sects,	important feat	ures, etc.	
Hydrophytic Veget	ation Present?	? Yes	X No									
Hydric Soil Presen	t?	Yes	X No	X No Is the Sampled Area				Yes	X	No		
Wetland Hydrology	/ Present?	Yes	X No	X No within a Wetland?								
Remarks:												
Southeastern p	ortion of A	OI										
HYDROLOGY												
Wetland Hydrolog	y Indicators						5	Secono	lary Indica	ators (minimum of	wo required)	
Primary Indicators	(minimum of a	one is require	d; check all t	hat apply	′)		_		Surface S	oil Cracks (B6)		
Surface Wat	er (A1)		Wat	er-Stained	Leaved (B9)		_	Sparsely Vegetated Concave Surface (B8)				
High Water	Table (A2)		Aqu	Aquatic Fauna (B13)					Drainage	Patterns (B10)		
Saturation (A	43)		Mar	Marl Deposits (B15) (LRR U)					X Moss Trim Lines (B16)			
Water Marks	s (B1)		Hyd	vdrogen Sulfide Odor (C1)				Dry-Season Water Table (C2)				
Sediment De	eposits (B2)		Oxio	lized Rhizo	chizospheres on Living Roots (C3)				X Crayfish Burrows (C8)			
Drift Deposit	:s (B3)		Pres	ence of R	educed Iron (C4)	_	Saturation Visible on Aerial Imagery (C9)					
Algal Mat or	Crust (B4)		Rec	ent Iron Re	eduction in Tilled Soils	_	Geomorphic Position (D2)					
Iron Deposit	s (B5)		Thin	Muck Sur	Muck Surface (C7)				Shallow Aquitard (D3			
Inundation V	isible on Aerial	Imagery (B7)	Othe	er (Explain	in Remarks)		_	X FAC-Neutral Test (D5)				
Field Observation	ıs:											
Surface Water Pre	sent?	Yes	No X	_	Depth (inches)							
Water Table Prese	nt?	Yes	No X		Depth (inches)		Wetland	d Hydı	rology Pr	esent? Yes	X No	
Saturation Present	:?	Yes	No X		Depth (inches)]			_		
(includes capillary	fringe)											
Describe Recorded	d Data (stream	n gauge, mon	itoring well,	aerial pho	otos, previous inspe	ections),	if availab	ole:				
Remarks:												

Sampling Point 1	
------------------	--

	Other from A Policy of the Control o	Absolute	Dominant	Indicator	Parational Test weeks heat	
	Stratum (Plot size:	% Cover	Species?	Status	Dominance Test worksheet:	
1	Salix nigra	40	<u>Y</u>	FACW+	Number of Dominant Species	
2	Morus rubra	25	<u>Y</u>	FACU+	That Are OBL, FACW, or FAC:	_ (A)
3	Sapium sebiferum	15	N	FACU		
4	Celtis occidentalis	15	N	FAC	Total Number of Dominant	
5		_			Species Across All Strata:	_ (B)
6.						
7					Precent of Dominant Species	
		95	= Total Cov	er	That Are OBL, FACW, or FAC:	(A/B)
Saplin	g Stratum (Plot size:)				
1	Sapium sebiferum	30	Y	FACU+	Prevalence Index worksheet:	
2.	Celtis occidentalis	10	Υ	FAC	Total % Cover of: Multiply by:	
3.					OBL species x1 =	
4.					FACW species x2 =	_
5.					FAC species x3 =	_
6.					FACU species x4 =	_
7.		_			UPL species x5 =	
·· –		40	= Total Cov		Column Totals: (A)	(B)
Shruh	Statum (Plot size:	١	= 10tai 00V	01	Column Totals.	_(D)
1.	Toxicodendron vernix	<u>)</u> 60	V	OBL	Prevalence Index = B/A =	
2.	Ilex decidua	20	<u> </u>	FACW-	Frevalence index = B/A =	_
_	Ilex vomitoria	10	N	FAC-	Hudronbutis Vanatation Indicators	
3	nex vornitoria	10	IN	FAC-	Hydrophytic Vegetation Indicators:	
4					Dominance Test is >50%	
5					Prevalence Index is ≤3.0 ¹	
6		_			Problematic Hydrophytic Vegetation ¹ (Explain)	
7		_				
		90	= Total Cov	er	¹ Indicators of hydric soil and wetland hydrology must	
Herb S	Stratum (Plot size:)			be present, unless distrubed or problematic.	
1	Hibiscus moscheutos	40	Y	OBL	Definitions of Vegetation Strata:	
2.	Rubus trivialis	30	Υ	FAC		
3.	Fragaria virginiana		N	FAC	Tree - Woody plants, excluding woody vines,	
	riayana virginiana	10		= 4 0		
4.	Trifolium repens	10	N	FACU+		
4 5.	<u> </u>		N	FACU+	approximately 20 ft (6 m) or more in height and 3 in.	
_	<u> </u>		N	FACU+		
_	<u> </u>		N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
_	<u> </u>		N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines,	
5. — 6. — 7. — 8. —	<u> </u>		N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
5 6 7 8 9	Trifolium repens	10	N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines,	
5	<u> </u>	10	N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
5. — 6. — 7. — 8. — 9. — 10. —	Trifolium repens	10	N	FACU+	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines,	
5	Trifolium repens	10			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
5 6 7 8 9 10 11 12	Trifolium repens	10	= Total Cov		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
5	Trifolium repens	10			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including	
5	Trifolium repens	90			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody	
5	Trifolium repens y Vine Statum (Plot size:	90			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately	,
5	Trifolium repens y Vine Statum (Plot size:	90			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody	
5	Trifolium repens y Vine Statum (Plot size:	90			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately	
5	Trifolium repens y Vine Statum (Plot size:	90			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately	
5	Trifolium repens y Vine Statum (Plot size:	90		er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	,
5	Trifolium repens y Vine Statum (Plot size:	90	= Total Cov	er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	,
5	Trifolium repens y Vine Statum (Plot size:	90	= Total Cov	er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
5	Trifolium repens y Vine Statum (Plot size:	90	= Total Cov	er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.	,
5	Trifolium repens y Vine Statum (Plot size:	90	= Total Cov	er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Hydrophatic	
5	Trifolium repens y Vine Statum (Plot size:	90	= Total Cov	er	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Hydrophatic Vegetation	

SOIL Sampling Point: 1

Profile Descrip	otion: (Descrie to	the depth ne	eded to documer	nt the indic	ator or cnfirm	the absenc	e of indicators.)				
Depth	Matr	_			Features		,				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	_ Texture	Remarks			
0-8	10 YR 4/1	70	10 YR 3/6	5		M	F, F				
	10 YR 4/2	30									
8"+	10 YR 3/1	100	10 YR 4/6	7	D	M	C, F, D				
				-	·		-, -, -				
	· ·										
	· ·										
¹ Type: C=Cond	centration, D=Deple	etion. RM=R	educed Matrix, CS=	=Covered o	r Coated Sand	Grains.	² Location: PL=Por	re Lining, M=Matrix			
Hydric Soil			,				for Problematic Hyd	•			
Historol (A			Polvvalue B	elow Surface	(S8) (LRR S, T,						
Histic Epip					LRR S, T, U)	-,	2 cm Muck (A				
Black Histi				ky Mineral (F	· · · · · ·			ic (F18) (outside MLRA 150A,B)			
	Sulfide (A4)			ed Matric (F2	, ,			odplain Soils (F19) (LRR P, S, T)			
	_ayers (A5)		X Depleted Ma		-/			right Loamy Soils (F(20)			
	odies (A6) (LRR P, T,	U)		Surface (F6)	1		(MLRA 153B)				
	ky Mineral (A7) (LRR	-		ark Surface (F			Red Parent Ma				
	sence (A8) (LRR U)		 ·	essions (F8)	- /			Dark Surface (TF-12) (LRR T, U)			
	(A9) (LRR P, T)		Marl (F10) (, ,			Other (Explain				
Depleted E	Below Dark Surface (A	A11)		chric (F11) (N	ILRA 151)			,			
	Surface (A12)	,			(F12) (LRR O, F	, T)	³ Indicators of I	hydrophytic vegetation and			
	irie Redox (A16) (MLF	RA 150A)	Umbric Surf	ace (F13) (Li	RR P, T, U)		wetland hydro	logy must be present,			
Sandy Mu	cky Mineral (S1) (LRR	R O, S)	Delta Ochrid	(F17) (MLR	A 151)		-	ed or problematic.			
Sandy Gle	yed Matrix (S4)		Reduced Ve	ertic (F18) (M	LRA 150A, 150E	3)		·			
Sandy Red	dox (S5)		Piedmont Fl	oodplain Soil	ls (F19) <u>(MLRA 1</u>	49A)					
Stripped M			Anomalous	Bright Loamy	/ Soils (F20) (ML	RA 149A, 153C	C, 153D)				
Dark Sur	face (S7) (LRR P,	S, T, U)									
Restrictive Lay	yer (If observed):										
Type:			_			Hydric Soi	s _Y_ No				
Depth (In	nches):										
Remarks:											

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: S	Star Lake Canal Su	uperfund S	Site / Jeffe	rson Canal	City/County:	Port N	leches /	Jeffe	rson	Samplir	ng Date:	04/08	/09
_	Chevron Envir				_		S	tate:	TX		ng Point:	2	
Investigator(s):	Brandon L. Ov	vens / N	/latt D. I	Brown	Section, Towns	hip, Range	:	_			_		
Landform (hillslope,	terrace, etc.):	Drain	age Ba	sin	Local relief (cor	icave, conv	/ex, none):	,	Slope			Slope (%): 10
Subregion (LRR or M	ILRA): LRF	₹ T		Lat: N 29°	° 57' 59.25"		Long: W	93° 5	5' 03.82	"	Datum:	WGS	34
Soil Map Unit Name:	Franeau	ı clay, 0	to 1 %	slopes,	occassionally	flooded		NV	/I Class	ification:	Partially h	ydric	
Are climate/hydrolog	ic condtions on th	ne site typ	oical for th	nis time of y	year?	Yes	Х	No _	(If no, exp	olain in Re	marks)	
Are Vegetation	N Soil N	or Hyd	rology	N signifi	cantly disturbed?	Are "I	Normal Cir	cumst	ances"	oresent?	Yes	X No	
Are Vegetation	N Soil Y	or Hyd	rology	N natura	ally problematic?	(If r	needed, ex	plain a	any ansv	vers in R	emarks.)		
SUMMARY OF I	FINDINGS - A	ttach s	ite ma	showir	ո <mark>g sampling լ</mark>	oint loc	ations,	trans	ects, i	mporta	ant featu	ıres, etc.	
Hydrophytic Vegetati	ion Present?	Yes		No X	1								
Hydric Soil Present?		Yes	NA	No	Is the Sampled	l Area	١	es_		No	X		
Wetland Hydrology F	Present?	Yes		No X	within a Wetlar	nd?							
Remarks:													
Fielded area sou	th of pump sta	ation ro	ad										
HYDROLOGY													
Wetland Hydrology	Indicators						Se	conda	ry Indica	ators (mir	nimum of t	wo required)
Primary Indicators (n	ninimum of one is	required	l; check a	ll that apply	y)	_			Surface S	oil Cracks	(B6)		
Surface Water	(A1)		V	ater-Stained	Leaved (B9)				Sparsely '	Vegetated	Concave S	urface (B8)	
High Water Ta	ble (A2)		A	quatic Fauna	a (B13)				Orainage	Patterns (I	310)		
Saturation (A3))		M	arl Deposits	(B15) (LRR U)			N	∕loss Trin	n Lines (B	16)		
Water Marks (I	31)		Hydrogen Sulfide Odor (C1)					Dry-Season Water Table (C2)					
Sediment Depo	osits (B2)		0	xidized Rhiz	ospheres on Living	Roots (C3)			Crayfish E	Burrows (C	8)		
Drift Deposits ((B3)		Presence of Reduced Iron (C4)					Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Ci	rust (B4)		R	ecent Iron R	eduction in Tilled So	oils (c6)		Geomorphic Position (D2)					
Iron Deposits (B5)		TI	hin Muck Su	rface (C7)				Shallow A	quitard (D	3		
Inundation Visi	ble on Aerial Image	ry (B7)	0	ther (Explain	in Remarks)		_	F	AC-Neur	ral Test (D	05)		
Field Observations	 :												
Surface Water Prese	ent? Yes	3	No	Χ	Depth (inches	s)							
Water Table Present	? Yes		No	Х	Depth (inches	s)	Wetland	Hydro	logy Pr	esent?	Yes	No	X
Saturation Present?	Yes		No	Х	Depth (inches	s)	1				_		
(includes capillary fri	nge)						1						
Describe Recorded [Data (stream gau	ge, monit	oring wel	l, aerial ph	otos, previous ins	spections),	if available	:					
Remarks:													
Dry field													

/EGETATION	I - Use	scientific	names	of plants.
	- USC	3010111110	Hallics	oi biaiits.

	A1 1 .	5	1 11 1			
ee Stratum (Plot size:	Absolute) % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
(1 lot 0120.				Number of Dominant Species		
·				That Are OBL, FACW, or FAC:		(A)
				-		_('')
				Total Number of Dominant		
				Species Across All Strata:		(B)
				- -		_(_)
				Precent of Dominant Species		
_		= Total Cove	r	That Are OBL, FACW, or FAC:		(A/B)
oling Stratum (Plot size:)					_ ` ′
				Prevalence Index worksheet:	:	
				Total % Cover of:	Multiply by:	
				OBL species	x1 =	
				FACW species	x2 =	
				FAC species	x3 =	
				FACU species	x4 =	_
				UPL species	x5 =	_
		= Total Cove	r	Column Totals:	(A)	(B)
rub Statum (Plot size:)			Dravalance Index D/A		_
				Prevalence Index = B/A	=	_
				Hydrophytic Vegetation Indic	natore:	
				Dominance Test is >50		
				Prevalence Index is <3		
				Problematic Hydrophyti		
				- Troblematic Hydrophyti	c vegetation (Explain)	
		= Total Cove		Indicators of hydric soil and we	etland hydrology must	
rb Stratum (Plot size:		= 10tai 00vc	•1	be present, unless distrubed or		
Stenotaphrum secundatum	90	Υ	FAC+	Definitions of Vegetation Stra		
Trifolium repens	30	<u> </u>	FACU+			
Nothoscordum bivalve	30	<u> </u>	FAC	Tree - Woody plants, excluding	woody vines	
Taraxacum officinale	10	N	FACU+	approximately 20 ft (6 m) or mo	•	
Fragaria virginiana	10	N	FAC	(7.6 cm) or larger in diameter a	=	
Baptisia tinctoria		N	FAC		g (= = /-	
				Sapling - Woody plants, exclu	dina woodv vines.	
				approximately 20 ft (6 m) or mo		
-				than 3 in. (7.6 cm) DBH.		
				Shrub - Woody plants, excludi	ng woody vines,	
				approximately 3 to 20 ft (1 to 6	-	
	175	= Total Cove	r	· · · · · · · · · · · · · · · · · · ·	,	
ody Vine Statum (Plot size:				Herb - All herbaceous (non-wo	ody) plants, including	
				herbaceous vines, regardless of		/
				plants, except woody vines, les	•	
				3 ft (1 m) in height.	,	
				· `		
				Woody vine - All woody vines,	regardless of height.	
				riced rines,	. ogararood or morgina	

Vegetation Present?

Yes

No

Χ

SOIL Sampling Point: 2

Profile Descrip	tion: (Descrie to th	ne depth ne	eded to documen	t the indica	tor or cnfirm	the absence	of indicators.)				
Depth	Matrix	(Redox F	eatures						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-20"	Spoil Mix 2/1										
				-							
				-							
				-							
				-							
				-							
¹ Type: C=Cond	centration, D=Deplet	tion, RM=Re	duced Matrix, CS=	Covered or	Coated Sand	Grains.	² Location: PL=Pore	e Lining, M=Matrix			
Hydric Soil	Indicators:					Indicators f	or Problematic Hyd				
Historol (A			Polyvalue Be	elow Surface (S8) (LRR S, T,	U)	1 cm Muck (A9	9) (LRR O)			
Histic Epip			Thin Dark Su	ırface (S9) (L l	RR S, T, U)		2 cm Muck (A1	0) (LRR S)			
Black Histi				y Mineral (F1				c (F18) (outside MLRA 150A,B)			
_	Sulfide (A4)			ed Matric (F2)				dplain Soils (F19) (LRR P, S, T)			
	ayers (A5)		Depleted Ma					ght Loamy Soils (F(20)			
	odies (A6) (LRR P, T, U	J)	Redox Dark				(MLRA 153B)	3 , ((-)			
5 cm Mucl	ky Mineral (A7) (LRR P.	, T, U)		rk Surface (F7	7)		Red Parent Ma	aterial (TF2)			
Muck Pres	sence (A8) (LRR U)	,	Redox Depre		,			Dark Surface (TF-12) (LRR T, U)			
1 cm Mucl	(A9) (LRR P, T)		Marl (F10) (L	, ,			Other (Explain in Remarks)				
Depleted E	Below Dark Surface (A1	11)		hric (F11) (ML	RA 151)			,			
	Surface (A12)	,	Iron-Mangan	ese Masses (F12) (LRR O, P	, T)	³ Indicators of h	ydrophytic vegetation and			
	irie Redox (A16) (MLRA	A 150A)	Umbric Surfa	ace (F13) (LR	R P, T, U)		wetland hydrol	ogy must be present,			
Sandy Mu	cky Mineral (S1) (LRR	O, S)	Delta Ochric	(F17) (MLRA	151)		unless disturbed or problematic.				
Sandy Gle	yed Matrix (S4)		Reduced Vertic (F18) (MLRA 150A, 150B)								
Sandy Red			Piedmont Floodplain Soils (F19) (MLRA 149A)								
Stripped M			Anomalous E	Bright Loamy	Soils (F20) (MLI	RA 149A, 153C,	153D)				
	face (S7) (LRR P, S	s, T, U)									
Restrictive Lay	yer (If observed):										
Type:						Hydric Soil	Present? Yes	s No _X_			
Depth (Ir	nches):		_								
Remarks:											
l											

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: S	Star Lake Can	al Superfund S	Site / Jefferson Ca	anal City/County:	Port Necl	hes / Jefferson	Sampling Date:	04/08/09		
				ent Company		State: TX	Sampling Point:	3		
_			Лatt D. Brown		hip, Range:		_			
Landform (hillslope,	terrace, etc.)	: Drain	age Basin	Local relief (con	cave, convex,	none): Slope		Slope (%): 2		
Subregion (LRR or N	MLRA):	LRR T	Lat: N	1 29° 57' 57.94"	Lor	ng: W 93° 55' 03.8	3" Datum:	WGS84		
Soil Map Unit Name:	: Fran	eau clay, C	to 1 % slope	es, occassionally	flooded	NWI Clas	sification: Partially h	ydric		
Are climate/hydrolog	gic condtions	on the site typ	oical for this time	e of year?	Yes >	X No	(If no, explain in Rer	marks)		
Are Vegetation	N Soil	N or Hyd	rology N si	gnificantly disturbed?	Are "Norr	mal Circumstances"	present? Yes _	X No		
Are Vegetation	N Soil	N or Hyd	rology N na	aturally problematic?	(If need	ded, explain any ans	wers in Remarks.)			
SUMMARY OF I	FINDINGS	- Attach s	ite map sho	wing sampling p	oint location	ons, transects,	important featu	ıres, etc.		
Hydrophytic Vegetat	tion Present?	Yes	X No							
Hydric Soil Present?	Hydric Soil Present? Yes			Is the Sampled	Area	Yes X	No			
Wetland Hydrology F	Present?	Yes	X No	within a Wetlar	nd?					
Remarks:		N I								
Southeastern po	ortion of AC)I								
LIVEROLOGY										
HYDROLOGY	. Indicators					Casandan India	estara (minimum of t	wa raquirad)		
Wetland Hydrology		no io roquiros	to aboat all that a	annlu)			cators (minimum of ty	vo requirea)		
Primary Indicators (n X Surface Water		ne is required		• • • •	_		Soil Cracks (B6)	urface (DO)		
				ained Leaved (B9) auna (B13)			Vegetated Concave Su Patterns (B10)	mace (Bo)		
High Water Ta X Saturation (A3				osits (B15) (LRR U)						
X Water Marks (I				Sulfide Odor (C1)		Moss Trim Lines (B16) Dry-Season Water Table (C2)				
Sediment Dep	,			Rhizospheres on Living F	Poots (C3)	X Crayfish Burrows (C8)				
Drift Deposits				of Reduced Iron (C4)	(00)	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or C				on Reduction in Tilled So	nils (c6)		phic Position (D2)	jery (00)		
Iron Deposits (k Surface (C7))ii3 (00)		Aquitard (D3			
1/	sible on Aerial Ir	magery (B7)		plain in Remarks)			utral Test (D5)			
Triandation vis	iibic on Achai ii	nagery (Dr)	Outlot (EX	piani in Remarks)			arar rest (Bo)			
Field Observations										
Surface Water Prese	ent?	Yes X	No	Depth (inches	s) 1-6"					
Water Table Present	it?	Yes	No X	Depth (inches		etland Hydrology P	resent? Yes	X No		
Saturation Present?		Yes X	No	Depth (inches			_			
(includes capillary fri	inge)									
Describe Recorded I	Data (stream	gauge, monit	toring well, aeria	I photos, previous ins	pections), if av	/ailable:				
Remarks:										
Water in pit 4"+										

-	O	Absolute	Dominant	Indicator	
	Stratum (Plot size:) % Cover	Species?	Status	Dominance Test worksheet:
1	Salix nigra	30	<u>Y</u>	FACW+	Number of Dominant Species
2	Acer rubrum ssp. Drummondii	25	<u>Y</u>	FACW	That Are OBL, FACW, or FAC: (A)
3.	Sapium sebiferum		N	FACU+	
4.	Celtis occidentalis		N	FAC	Total Number of Dominant
5.	Fraxinus pennsylvanica	5	N	FACW-	Species Across All Strata: (B)
6.					
7.					Precent of Dominant Species
		75	= Total Cov	er	That Are OBL, FACW, or FAC: (A/B
Sapli	ng Stratum (Plot size:)			
1.					Prevalence Index worksheet:
2.		<u> </u>			Total % Cover of: Multiply by:
^					OBL species x1 =
4					FACW species x2 =
_					FAC species x3 =
6.					FACU species x4 =
7.					UPL species x5 =
-			= Total Cov	er	Column Totals: (A) (B)
Shrul	o Statum (Plot size:)			
1.	Myrica cerifera	<u></u>	Υ	FAC+	Prevalence Index = B/A =
2.	Acer rubrum ssp. Drummondii	10	Y	FACW	
3.					Hydrophytic Vegetation Indicators:
4.					Dominance Test is >50%
5.			<u> </u>		Prevalence Index is <3.01
6.					Problematic Hydrophytic Vegetation ¹ (Explain)
7.					Troblematic Tryatophytic Vegetation (Explain)
· -		25	= Total Cov		¹ Indicators of hydric soil and wetland hydrology must
Jorh	Stratum (Plot size:		= Total Cov	CI.	be present, unless distrubed or problematic.
1.	Alternanthera philoxeroides	<u>)</u> 40	Υ	OBL	Definitions of Vegetation Strata:
2.	Hydrocotyle umbellata	10	N	OBL	Definitions of Vegetation Strata.
-	Typha latifolia	10	N	OBL	Troe Woody plants, evaluding woody vines
3	31			FACW+	Tree - Woody plants, excluding woody vines,
4.	Andropogon glomeratus	10	N	FACVV+	approximately 20 ft (6 m) or more in height and 3 in.
5.					(7.6 cm) or larger in diameter at breast height (DBH).
6. _					
′. -		_			Sapling - Woody plants, excluding woody vines,
8.					approximately 20 ft (6 m) or more in height and less
9.					than 3 in. (7.6 cm) DBH.
10.					
11					Shrub - Woody plants, excluding woody vines,
12					approximately 3 to 20 ft (1 to 6 m) in height.
		70	= Total Cov	er	
Noo	dy Vine Statum (Plot size:)			Herb - All herbaceous (non-woody) plants, including
1.					herbaceous vines, regardless of size. Includes woody
2.					plants, except woody vines, less than approximately
3.					3 ft (1 m) in height.
4.					
5.					Woody vine - All woody vines, regardless of height.
-			= Total Cov	er	
Rema	arks: (If observed, list morphological adap	tations below).			
	, , , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · ·			Hydrophatic
					Vegetation
					Present? Yes Y No
					100 1

SOIL Sampling Point: 3

Profile Descrip	otion: (Descrie to	the depth ne	eded to documen	t the indic	ator or cnfirm	the absence	of indicators.)				
Depth	Mat	rix		Redox F	eatures						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-8	10 YR 4/1	100									
8"+	10 YR 5/1	100									
¹ Type: C=Cond	centration, D=Depl	etion, RM=Re	educed Matrix, CS=	:Covered or	Coated Sand	Grains.	² Location: PL=Pore	e Lining, M=Matrix			
Hydric Soil	Indicators:					Indicators f	or Problematic Hyd				
Historol (Polyvalue Be	elow Surface	(S8) (LRR S, T,	U)	1 cm Muck (A9	9) (LRR O)			
	pedon (A2)		Thin Dark Su	urface (S9) (L	.RR S, T, U)	•	2 cm Muck (A1	0) (LRR S)			
Black Hist			Loamy Muck					c (F18) (outside MLRA 150A,B)			
	Sulfide (A4)		Loamy Gleye	•				dplain Soils (F19) (LRR P, S, T)			
	_ayers (A5)		X Depleted Ma		,			ght Loamy Soils (F(20)			
	odies (A6) (LRR P, T	, U)	Redox Dark				(MLRA 153B)	3 , ((-)			
	ky Mineral (A7) (LRR		Depleted Da	` '			Red Parent Ma	aterial (TF2)			
	sence (A8) (LRR U)	,	Redox Depre		,			Dark Surface (TF-12) (LRR T, U)			
1 cm Muc	k (A9) (LRR P, T)		Marl (F10) (L	, ,			Other (Explain in Remarks)				
Depleted I	Below Dark Surface (A11)	Depleted Oc		LRA 151)			,			
	k Surface (A12)	,	Iron-Mangan	ese Masses	(F12) (LRR O, F	, T)	³ Indicators of h	ydrophytic vegetation and			
	irie Redox (A16) (MLI	RA 150A)	Umbric Surfa	ace (F13) (LF	RR P, T, U)		wetland hydrol	ogy must be present,			
Sandy Mu	cky Mineral (S1) (LRF	R O, S)	Delta Ochric	(F17) (MLR	A 151)		-	ed or problematic.			
Sandy Gle	eyed Matrix (S4)		Reduced Ve	rtic (F18) (ML	·						
Sandy Re			Piedmont Flo	oodplain Soils	s (F19) <u>(MLRA 1</u>	49A)					
Stripped N			Anomalous E	Bright Loamy	Soils (F20) (ML	RA 149A, 153C,	153D)				
	face (S7) (LRR P,	S, T, U)									
Restrictive La	yer (If observed):										
Type:						Hydric Soil	Present? Yes	s _Y_ No			
Depth (Ir	nches):		_								
Remarks:											
I											

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfund	Site / Jeffers	son Canal	City/County:	Port N	leches /	Jeffe	rson	Samplin	ng Date:	04/08/	09	
Applicant/Owner:	Chevron Environmental Management Company							State:	TX	Samplin	ng Point:	4		
Investigator(s):	Brandon L	Owens / I	Matt D. B	rown	Section, Townsh	p, Range	:							
Landform (hillslope	e, terrace, etc.): Drair	nage Bas	in	Local relief (cond	ave, conv	/ex, none)	: 5	Slope			Slope (%)	: 10	
Subregion (LRR or	MLRA):	LRR T	L	at: N 29°	57' 58.07"		Long: W	/ 93° 5	5' 06.50"		Datum:	WGS8	4	
Soil Map Unit Nam	ie: <u>Fra</u> i	neau clay, (0 to 1 % s	slopes, o	occassionally fl	ooded		NV	VI Classi	fication:	Partially h	ydric		
Are climate/hydrolo	ogic condtions	on the site ty	pical for thi	s time of y	/ear?	Yes	Х	No _	(1	f no, exp	lain in Rer	narks)		
Are Vegetation	N Soil	N or Hyd	drology 1	signifi	cantly disturbed?	Are "l	Normal Ci	rcumst	ances" p	resent?	Yes	X No		
Are Vegetation	N Soil	N or Hyd	drology 1	√ natura	ally problematic?	(If r	needed, ex	cplain a	any answ	ers in Re	emarks.)			
SUMMARY OF	FINDING	S - Attach	site map	showir	ng sampling p	oint loc	ations,	trans	ects, i	mporta	ant featu	ires, etc.		
Hydrophytic Veget	ation Present	? Yes	N	o <u>X</u>]									
Hydric Soil Presen	t?	Yes	N	o <u>X</u>	Is the Sampled	Area	•	Yes _		No	Х			
Wetland Hydrology	/ Present?	Yes	N	o <u>X</u>	within a Wetland	1?								
Remarks:					<u> </u>									
Agricultural Fie	ld West of	Jefferson C	anal											
HYDROLOGY														
Wetland Hydrolog	y Indicators						Se	conda	ry Indica	tors (min	imum of tv	vo required)		
Primary Indicators	(minimum of	one is require	d; check all	that apply	y)	_			Surface So	oil Cracks	(B6)			
Surface Wat	er (A1)		Wa	ter-Stained	Leaved (B9)				Sparsely \	egetated	Concave Su	ırface (B8)		
High Water	Table (A2)		Aqı	uatic Fauna	ı (B13)				Orainage I	Patterns (E	310)			
Saturation (A	43)		Ma	rl Deposits	(B15) (LRR U)			N	Moss Trim	Lines (B1	6)			
Water Marks	s (B1)		Нус	drogen Sulf	ide Odor (C1)	Odor (C1) Dry-Season Water Table (C2)								
Sediment De	eposits (B2)		Oxi	dized Rhiz	ospheres on Living R		Crayfish Burrows (C8)							
Drift Deposit	s (B3)		Pre	sence of R	educed Iron (C4)		Saturation Visible on Aerial Imagery (C9)							
Algal Mat or	Crust (B4)		Re	Recent Iron Reduction in Tilled Soils (c6)					Geomorphic Position (D2)					
Iron Deposit	s (B5)		Thi	Thin Muck Surface (C7)					Shallow Aquitard (D3					
Inundation V	isible on Aerial	Imagery (B7)	Other (Explain in Remarks)			FAC-Neutral Test (D5)								
Field Observation	 ns:													
Surface Water Pre	sent?	Yes	No >	<	Depth (inches)									
Water Table Prese	ent?	Yes	No >	<	Depth (inches)		Wetland	Hydro	logy Pre	sent?	Yes	No	Χ	
Saturation Present	:?	Yes	No >	<	Depth (inches)		1				_			
(includes capillary	fringe)						1							
Describe Recorded	d Data (strean	n gauge, mon	itoring well,	aerial ph	otos, previous insp	ections),	if available	э:						
Remarks:														
Dry field														

EGETATION - Us	scientific names	of plants.
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Sampling Point 4

	(Plot size:)		Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)				
6					Total Number of Dominant Species Across All Strata:	(B)			
7.			= Total Cove	r	Precent of Dominant Species That Are OBL, FACW, or FAC:	(A/B			
Sapling Stratum 1.	(Plot size:)				Prevalence Index worksheet:				
					Total % Cover of:	Multiply by:			
_						x1 =			
· —						x2 =			
					FAC species	x3 =			
6					FACU species	x4 =			
7					UPL species	v5 -			
·			= Total Cove			x5 =(B)			
Chrish Ctation	(Dist size:		= Total Cove	I	Column rotals.	(A)(B)			
0	(Plot size:)				Prevalence Index = B/A =				
3.					Liver physic Venetation Indicator				
					Hydrophytic Vegetation Indicator	· S.			
					Dominance Test is >50%				
5					Prevalence Index is <3.01	1			
6					Problematic Hydrophytic Ve	egetation' (Explain)			
7			= Total Cove		¹ Indicators of hydric soil and wetlan	nd hydrology must			
Herb Stratum	(Plot size:		= Total Cove	ı	be present, unless distrubed or prol				
·	(Plot size:)	00	V	FAC+		Diemaiic.			
	aphrum secundatum	90	<u>Y</u>	FACU+	Definitions of Vegetation Strata:				
	m repens	20			T \\\(\lambda\)	and the state of			
	scordum bivalve	20	<u>Y</u>	FAC	Tree - Woody plants, excluding woo				
	cum officinale	10	<u>N</u>	FACU+	approximately 20 ft (6 m) or more in	-			
	ia virginiana	30	<u>Y</u>	FAC	(7.6 cm) or larger in diameter at bre	east height (DBH).			
	trivialis	5	N	FAC					
7					Sapling - Woody plants, excluding				
8.					approximately 20 ft (6 m) or more in	n height and less			
9.					than 3 in. (7.6 cm) DBH.				
10									
11					Shrub - Woody plants, excluding w	roody vines,			
					approximately 3 to 20 ft (1 to 6 m) in	n height.			
		175	= Total Cove	r					
Noody Vine Sta	atum (Plot size:)				Herb - All herbaceous (non-woody)	plants, including			
1. Ampelo	opsis arborea	10	Y	FAC	herbaceous vines, regardless of siz	ze. Includes woody			
2.					plants, except woody vines, less that	an approximately			
3.					3 ft (1 m) in height.	, ,			
4.					,				
5.					Woody vine - All woody vines, rega	ardless of height			
J		10	= Total Cove	r	The Moody villes, lego	araiooo or noignit.			
Damania (If I	annial Batanamakatasialasi et		= Total Cove	I					
Remarks: (If obs	served, list morphological adaptat	ons below).			Hydrophatic Vegetation				
					Present? Yes _	NoX			

SOIL

Sampling Point:

4

Depth inches)	Mati		Calar (masiat)	Redox F		Loc ²	Tandona	Damania		
0-6"	Color (moist)	% 100	Color (moist)	%	Type ¹	LOC	Texture	Remarks		
6"+	10 YR 4/2 10 YR 2/1	100								
0 +	10 11 2/1	100								
na: C-Con	centration D-Denl	ation PM-P	educed Matrix, CS=	·Covered or	Coated Sand	Grains	² Location: PL=Pore	Lining M-Matrix		
	Indicators:	Ction, rtivi–rt	caacca Matrix, CO-	OOVERED OF	Odalca Garia		for Problematic Hyd			
Historol (Polyvalue Be	elow Surface (S8) (LRR S, T,		1 cm Muck (A9			
	pedon (A2)			urface (S9) (L I	· · ·	٠,	2 cm Muck (A1	•		
Black His				y Mineral (F1				: (F18) (outside MLRA 150A,B)		
	Sulfide (A4)			ed Matric (F2)				dplain Soils (F19) (LRR P, S, T)		
	Layers (A5)							ght Loamy Soils (F(20)		
	Bodies (A6) (LRR P, T ,	U)	Depleted Ma					gin Luainy Julis (F(ZU)		
	ky Mineral (A7) (LRR			Surface (F6) rk Surface (F7	7)		(MLRA 153B) Red Parent Ma	terial (TE2)		
	sence (A8) (LRR U)	. , ., 0,)			Dark Surface (TF-12) (LRR T, U)		
	k (A9) (LRR P, T)		Redox Depre			Other (Explain in Remarks)				
	Below Dark Surface (۸11)		hric (F11) (ML	RΔ 151)		Other (Explain	iii iteiliaiks)		
	k Surface (A12)	A11)			F12) (LRR O, P	T)	³ Indicators of h	ydrophytic vegetation and		
_	airie Redox (A16) (MLF	RΔ 150Δ)		ace (F13) (LR		, .,		ogy must be present,		
	ucky Mineral (S1) (LRF	-		(F17) (MLRA	· · · · ·		-	d or problematic.		
	eyed Matrix (S4)	. 0, 0,			.o., RA 150A, 150B)	uness disturbe	d of problematic.		
Sandy Re					(F19) (MLRA 1	-				
	Matrix (S6)				Soils (F20) (MLI		153D)			
	rface (S7) (LRR P,	S. T. U)		g,	(·) <u>,</u>	,	<u> </u>			
	, , , ,	-, -, -,								
strictive La	yer (If observed):									
Type:						Hydric Soil	Present? Yes	No _X_		
	nches):		_							
marks:						•				

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Superfund	Site / Jeffers	on Canal	City/County:	Port N	leche	s / Jeff	erson	Sampling D	Date:	04/08/0	9
Applicant/Owner:	Chevron Er							State	: TX	Sampling F	Point:	5	
Investigator(s):	Brandon L	. Owens / I	Matt D. Bi	own	Section, Townsh	ip, Range	:	•					
Landform (hillslope	e, terrace, etc.)	: Drair	nage Basi	n	_ Local relief (cond	cave, conv	ex, no	ne):	Slope			Slope (%):	2
Subregion (LRR or	r MLRA):	LRR T	L	at: N 29°	° 57' 50.75"		Long:	W 93°	55' 07.08	." Da	atum:	WGS84	
Soil Map Unit Nam	ie: <u>Lea</u>	gue-Urban	land com	plex					WI Class	ification: No	t hydric		
Are climate/hydrolo	ogic condtions	on the site ty	pical for this	time of y	year?	Yes	Х	No		(If no, explair	า in Rem	arks)	
Are Vegetation	N Soil	N or Hyd	drology N	signific	cantly disturbed?	Are "I	Normal	Circum	stances"	present? Y	Yes	X No	
Are Vegetation	N Soil	N or Hyd	drology N	l_natura	ally problematic?	(If r	needed	, explair	n any ans	wers in Rema	arks.)		
SUMMARY OF	FINDINGS	- Attach	site map	showin	ng sampling p	oint loc	ation	s, trar	sects,	important	featur	es, etc.	
Hydrophytic Vegeta	ation Present?	Yes	X N	o									
Hydric Soil Present	t?	Yes	X N	o	Is the Sampled	Area		Yes	X	No			
Wetland Hydrology	/ Present?	Yes	X N	o	within a Wetlan	d?							
Remarks:													
HYDROLOGY													
Wetland Hydrolog	gy Indicators							Second	dary Indica	ators (minimu	um of tw	o required)	
Primary Indicators	(minimum of c	ne is require	d; check all	that apply	y)	_			Surface S	Soil Cracks (B6)	i)		
X Surface Water (A1) Water-Stained Leaved (B9) Sparsely Vegetated Concave Surface								face (B8)					
High Water	Table (A2)		Aqu	atic Fauna	a (B13)				Drainage	Patterns (B10))		
X Saturation (A	A3)		Mar	l Deposits	(B15) (LRR U)				Moss Trir	n Lines (B16)			
Water Marks	s (B1)		Нус	rogen Sulf	ide Odor (C1)				Dry-Seas	on Water Table	e (C2)		
Sediment De	eposits (B2)		Oxi	dized Rhize	ospheres on Living R	oots (C3)			Crayfish I	Burrows (C8)			
Drift Deposit	ıs (B3)		Pre	sence of R	educed Iron (C4)				Saturation	n Visible on Ae	rial Image	ery (C9)	
Algal Mat or	Crust (B4)		Red	ent Iron R	eduction in Tilled Soi	ls (c6)			Geomorp	hic Position (Da	2)		
Iron Deposits	s (B5)		Thir	Muck Su	rface (C7)				Shallow A	Aquitard (D3			
X Inundation V	/isible on Aerial I	magery (B7)	Oth	er (Explain	in Remarks)			X	FAC-Neu	tral Test (D5)			
Field Observation	is:												
Surface Water Pres	sent?	Yes X	No	_	Depth (inches)		ļ						
Water Table Prese		Yes X	No	_	Depth (inches)		Wetla	nd Hyd	rology Pr	esent? Y	Yes _	X No	
Saturation Present	i?	Yes X	No	_	Depth (inches)	2"+	ļ						
(includes capillary	<u> </u>												
Describe Recorded	d Data (stream	gauge, moni	itoring well,	aerial pho	otos, previous insp	pections),	if availa	able:					
Remarks:													
\\/oto=:n=nit 1.4"	" .												
Water in pit 14"	+												

/EGETATION -	Use	scientific	names	of	plants.
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Tree Stratum

Sapling Stratum

Shrub Statum

Herb Stratum

1.

6.

6.

6.

2.

3.

5.

6.

8.

9.

Sampling Point 5 Absolute Dominant Indicator (Plot size: _____) _ % Cover_ Species? Status **Dominance Test worksheet:** Number of Dominant Species That Are OBL, FACW, or FAC: ____(A) Total Number of Dominant Species Across All Strata: Precent of Dominant Species That Are OBL, FACW, or FAC: = Total Cover (A/B) (Plot size: _____) 1. Sapium sebiferum 15 Y FACU+ Prevalence Index worksheet: Total % Cover of: Multiply by: __ x1 = ___ OBL species **FACW** species x2 = __ x3 = ____ FAC species FACU species x4 = ____ UPL species x5 = ____ Column Totals: ____ (A) ____ (B) (Plot size: _____) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is <3.01 Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must = Total Cover (Plot size: _____) be present, unless distrubed or problematic. **FACW** Cyperus virens **Definitions of Vegetation Strata:** OBL Hydrocotyle umbellata 20 OBL Eleocharis macrostachya 15 Tree - Woody plants, excluding woody vines, 4. Juncus effusus 15 Ν OBL approximately 20 ft (6 m) or more in height and 3 in. Rubus trivialis 10 (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 90 = Total Cover Woody Vine Statum (Plot size: _____) Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. = Total Cover Remarks: (If observed, list morphological adaptations below). Hydrophatic

> Vegetation Present?

Yes

No

SOIL Sampling Point: 5

Profile Descrip	tion: (Descrie to	the depth ne	eded to documer	nt the indic	ator or cnfirm	the absenc	e of indicators.)	
Depth	Matr	_			eatures		,	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	- Texture	Remarks
0-20"	10 YR 4/1	100	10 YR 5/8	10	D	M	Clay Loam	. tomanto
							<u> </u>	
¹ Type: C=Cond	entration D-Denk	etion RM-Re	educed Matrix, CS=	-Covered o	r Coated Sand	Grains	² Location: PL –Por	e Lining, M=Matrix
Hydric Soil		Ction, rawi–ra	caacca Matrix, CO-	-0070100	r coated caria		for Problematic Hyd	•
Historol (A			Polyvalue B	alow Surface	(S8) (LRR S, T,		1 cm Muck (AS	
				urface (S9) (I		0)	2 cm Muck (As	
Histic Epip								
Black Histi				ky Mineral (F	, ,			c (F18) (outside MLRA 150A,B)
	Sulfide (A4)			ed Matric (F2	2)			dplain Soils (F19) (LRR P, S, T)
	ayers (A5)		X Depleted Ma					ight Loamy Soils (F(20)
	odies (A6) (LRR P, T,	•		Surface (F6)			(MLRA 153B)	
	xy Mineral (A7) (LRR	P, I, U)		ark Surface (F	-7)		Red Parent Ma	, ,
	ence (A8) (LRR U)			essions (F8)				Dark Surface (TF-12) (LRR T, U)
	(A9) (LRR P, T)		Marl (F10) (I				Other (Explain	in Remarks)
	Below Dark Surface (A	A11)		chric (F11) (M	-		31 11 1 11	
	Surface (A12)				(F12) (LRR O, P	, 1)		nydrophytic vegetation and
	rie Redox (A16) (MLF	-		ace (F13) (LF	· · · · · ·		-	logy must be present,
	cky Mineral (S1) (LRF	R O, S)		(F17) (MLR	-	_	unless disturbe	ed or problematic.
	yed Matrix (S4)				LRA 150A, 150B	-		
Sandy Red				•	s (F19) (MLRA 1			
Stripped M			Anomalous	Bright Loamy	Soils (F20) (MLI	RA 149A, 153C	C, 153D)	
Dark Sur	face (S7) (LRR P,	S, T, U)						
						T		
-	ver (If observed):						V	. W. N.
Type:			_			Hydric Soi	I Present? Yes	s _Y_ No
Depth (In	iches):							
Remarks:								

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfund	Site / Jefferson C	anal City/County:	Port N∈	eches / Jeffers	on Samplir	ng Date:	04/08/09		
Applicant/Owner:	Chevron E	Environmen	ıtal Managem	ent Company		State: T	X Sampli	ng Point:	6		
Investigator(s):	Brandon L	. Owens / I	Matt D. Browi	n Section, Townsl	nip, Range:						
Landform (hillslope	e, terrace, etc.): Drair	nage Basin	Local relief (con	cave, conve	ex, none): Slo	рре		Slope (%): 2		
Subregion (LRR or	MLRA):	LRR T	Lat: N	N 29° 57' 58.07"	l	ong: W 93° 55' (06.50"	Datum:	WGS84		
Soil Map Unit Nam	ie: Lea	gue-Urban	land complex	<		NWI	Classification:	Not hydric	:		
Are climate/hydrolo	ogic condtions	on the site ty	pical for this time	e of year?	Yes	X No	(If no, exp	olain in Ren	narks)		
Are Vegetation	N Soil	N or Hyd	drology N si	ignificantly disturbed?	Are "N	ormal Circumstan	ces" present?	Yes	X No		
Are Vegetation	N Soil	Y or Hyd	drology N na	aturally problematic?	(If ne	eded, explain any	answers in R	emarks.)			
SUMMARY OF	FINDING	S - Attach	site map sho	wing sampling p	oint loca	itions, transed	cts, importa	ant featu	ıres, etc.		
Hydrophytic Vegeta	ation Present	? Yes	No	Х							
Hydric Soil Presen	t?	Yes	No	X Is the Sampled	Area	Yes	No	Х			
Wetland Hydrology	/ Present?	Yes	No	X within a Wetlar	ıd?						
Remarks:											
Area between s	spoil piles										
HYDROLOGY											
Wetland Hydrolog	gy Indicators					Secondary	Indicators (mir	nimum of tv	vo required)		
Primary Indicators	(minimum of	one is require	d; check all that	apply)		Sur	face Soil Cracks	(B6)			
Surface Wat	er (A1)		Water-St	ained Leaved (B9)	_	Spa	rsely Vegetated	Concave Su	ırface (B8)		
High Water	Table (A2)		Aquatic F	Fauna (B13)		Dra	inage Patterns (B10)			
Saturation (A	A3)		Marl Dep	oosits (B15) (LRR U)		Moss Trim Lines (B16)					
Water Marks	s (B1)		Hydroger	n Sulfide Odor (C1)		Dry	-Season Water	Γable (C2)			
Sediment De	eposits (B2)		Oxidized	Rhizospheres on Living I	Roots (C3)	Cra	yfish Burrows (C	(8)			
Drift Deposit	is (B3)		Presence	e of Reduced Iron (C4)		Sat	uration Visible or	n Aerial Imag	jery (C9)		
Algal Mat or	Crust (B4)		Recent Ir	ron Reduction in Tilled Sc	oils (c6)	Geo	morphic Positio	n (D2)			
Iron Deposits	s (B5)		Thin Muc	ck Surface (C7)		Sha	llow Aquitard (D	3			
Inundation V	isible on Aerial	Imagery (B7)	Other (E)	xplain in Remarks)		FAC	C-Neutral Test (E	05)			
Field Observation	ns:										
Surface Water Pre	sent?	Yes	No X	Depth (inches	i)						
Water Table Prese	ent?	Yes	No X	Depth (inches	(a)	Netland Hydrolog	gy Present?	Yes	No X		
Saturation Present	:?	Yes	No X	Depth (inches	3)			_			
(includes capillary	fringe)										
		n gauge, mon	itoring well, aeria	al photos, previous ins	pections), if	available:					
Remarks:											
Dry field											

/EGETATION	I - Use	scientific	names	of plants.
	- USC	3010111110	Hallics	oi biaiits.

Tree Stratum

1. Sapium sebiferum

1.

6.

6.

6.

2.

3.

6. 7.

8.

9.

Shrub Statum

Herb Stratum

(Plot size:

Trifolium repens

Fragaria virginiana

Rubus trivialis

Nothoscordum bivalve

Sampling Point 6 Absolute Dominant Indicator (Plot size: _____) _ % Cover_ Species? Status **Dominance Test worksheet:** Number of Dominant Species That Are OBL, FACW, or FAC: ____(A) Total Number of Dominant Species Across All Strata: Precent of Dominant Species That Are OBL, FACW, or FAC: = Total Cover (A/B) (Plot size: _____) 20 Y FACU+ Prevalence Index worksheet: Total % Cover of: Multiply by: __ x1 = ___ OBL species FACW species x2 = __ x3 = ____ FAC species FACU species ____ x4 = ____ UPL species x5 = ____ Column Totals: ____ (A) ____ (B) (Plot size: _____) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: Dominance Test is >50% Prevalence Index is <3.01 Problematic Hydrophytic Vegetation¹ (Explain) = Total Cover ¹Indicators of hydric soil and wetland hydrology must be present, unless distrubed or problematic. Stenotaphrum secundatum FAC+ **Definitions of Vegetation Strata:** FACU+ 20 **FAC** 20 Tree - Woody plants, excluding woody vines, Taraxacum officinale 10 FACU+ approximately 20 ft (6 m) or more in height and 3 in. 30 **FAC** (7.6 cm) or larger in diameter at breast height (DBH). FAC 5 Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 160 = Total Cover Woody Vine Statum (Plot size: _____) Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. = Total Cover Remarks: (If observed, list morphological adaptations below).

> Hydrophatic Vegetation Present?

Yes

Χ

No

SOIL

Sampling Point:

6

Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type ¹ Loc ² Texture 0-20" 10 YR 2/1 40 Type ¹ Loc ² Texture	
	Remarks
Spoil 60	
 	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lini	na M. Matrix
Historol (A-1) Polyvalue Below Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRF	·
Histic Epipedon (A2) Thin Dark Surface (S9) (LRR S, T, U) 2 cm Muck (A10) (LR	•
) (outside MLRA 150A,B)
Hydrogen Sulfide (A4) Loamy Gleyed Matric (F2) Piedmont Floodplain	Soils (F19) (LRR P, S, T)
Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Lo	pamy Soils (F(20)
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B)	
5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7) Red Parent Material	(TF2)
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark S	urface (TF-12) (LRR T, U)
1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Rer	marks)
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)	
Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) 3Indicators of hydrople	hytic vegetation and
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology m	
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or p	·
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)	nobicinatio.
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)	
Dark Surface (S7) (LRR P, S, T, U)	
Destrictive Leven (If the convert).	
Restrictive Layer (If observed):	No. V
Type: Hydric Soil Present? Yes	NO _X_
Depth (Inches):	
Remarks:	
Matrix = 60% Spoil	

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Car	nal Superfund	l Site / Je	fferson	Canal	City/County:	Port N	Neche:	s / Jef	terson	Samplir	ng Date:	04	/08/09	1
Applicant/Owner:	Chevron E	nvironme	ntal Ma	nagei	ment (Company			State	: <u>TX</u>	Sampli	ng Point:		7	
Investigator(s):	Brandon L	Owens /	Matt D	. Brov	vn	Section, Townsh	ip, Range	e:							
Landform (hillslope	, terrace, etc.): Dra	nage B	Basin		Local relief (cond	ave, con	vex, no	ne):	Slope			Slope	e (%):	2
Subregion (LRR or	MLRA):	LRR T		Lat:	N 29° 5	57' 57.94"		Long:	W 93°	55' 03.88	,,,,	Datum:	W	/GS84	
Soil Map Unit Nam	e: <u>Lea</u>	gue-Urbar	land c	omple	ex				1	NWI Class	ification:	Not hydric			
Are climate/hydrolo	ogic condtions	on the site t	ypical for	this tir	me of ye	ear?	Yes	Χ	No		(If no, exp	olain in Rer	narks)		
Are Vegetation	N Soil	N or Hy	drology	N	significa	antly disturbed?	Are "	'Normal	Circum	stances"	present?	Yes _	Χ	No _	
Are Vegetation	N Soil	Y or Hy	drology	N	naturall	y problematic?	(If	needed	, explaii	n any ans	wers in R	emarks.)			
SUMMARY OF	FINDINGS	S - Attach	site m	ap sh	owing	g sampling p	oint loc	cation	s, trar	nsects,	importa	ant featu	res, e	etc.	
Hydrophytic Veget	ation Present?	? Yes	Χ	No											
Hydric Soil Presen	t?	Yes	NA	No		Is the Sampled	Area		Yes	X	No				
Wetland Hydrology	/ Present?	Yes	Χ	No		within a Wetlan	d?								
Remarks:															
0-20" = 100% \$	Spoil														
	.,														
HYDROLOGY															
Wetland Hydrolog	ny Indicators								Second	dary Indic	ators (mir	nimum of tv	vo regu	uired)	
Primary Indicators		one is require	ed: check	all tha	it apply)	1			OCCOOL		Soil Cracks		ro roqu	ii cu)	
Surface Wat	`	one is require					-			_			ırface (R	(8)	
High Water				X Water-Stained Leaved (B9) Aquatic Fauna (B13)						Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)					
Saturation (A				Marl Deposits (B15) (LRR U)						_					
X Water Marks			Hydrogen Sulfide Odor (C1)						Moss Trim Lines (B16) Dry-Season Water Table (C2)						
Sediment De				• •		spheres on Living R	oots (C3)			_	Burrows (C				
Drift Deposit				•		-	0015 (C3)			_			rony (CO)	١	
Algal Mat or			Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (c6)						Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)						
Iron Deposit				-			3 (00)								
		lmanne (DZ)	Thin Muck Surface (C7) Other (Explain in Remarks)						Shallow Aquitard (D3 X FAC-Neutral Test (D5)						
inundation v	isible on Aerial I	imagery (67)		Other (Explain	n Remarks)				_ FAC-Neu	ıraı resi (L	15)			
Field Observation								Ī							
Surface Water Pre		Voc	No	~		Donth (inches)									
Water Table Prese		Yes Yes	_ No			Depth (inches)		Wetle	nd Uvd	rology Pr	ocent?	Yes	Х	No	
Saturation Present			_ No	<u>X</u>		Depth (inches)		vvelia	па пуа	rology Fi	esent	Tes _		No _	
		Yes	_ No	<u> </u>		Depth (inches)		-							
(includes capillary				11	al a Landa a d			26 11-	-1-1						
Describe Recorded	ı Data (stream	n gauge, moi	nitoring w	/eii, aei	riai pnoi	tos, previous insp	ections),	if availa	abie:						
Remarks:															

/EGETATION	I - Use	scientific	names	of plants.
	- USC	3010111110	Hallics	oi biaiits.

Sampling Point	/	
rksheet:		

Tree Stra	atum_	(Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. S	Salix nigra			20	Y	FACW+	Number of Dominant Species	
	Sapium sek	oiferum		10	Y	FACU+	That Are OBL, FACW, or FAC:	(A)
3. <i>F</i>	raxinus pe	nnsylvanica		10	Y	FACW		_ ` `
4. C	Celtis occia	entalis		5	N	FAC	Total Number of Dominant	
5.							Species Across All Strata:	(B)
6.							<u> </u>	_` ′
7.							Precent of Dominant Species	
				75	= Total Cove	er	That Are OBL, FACW, or FAC:	(A/B)
Sapling S	Stratum	(Plot size:)				· · ·	_` ′
1. <i>T</i>	oxicodena	lron vernix		60	Υ	OBL	Prevalence Index worksheet:	
2							Total % Cover of: Multiply by:	
3.							OBL species x1 =	
							TAC\\\\	-
							[FAO	-
_								_
7.							LUB -	
· —					= Total Cove		UPL species x5 = Column Totals: (A)	
Shrub St	otum	(Dlot oizo:	\		= TOTAL COVE	7 1	Column Totals. (A)	— ^(D)
	atum Iorus rubra	(Plot size:)	20	Υ	FACU	Prevalence Index = B/A =	
2.	iorus rubre	a				TACO	Frevalence index = B/A =	_
							Lludranhutia Variation Indicators	
3							Hydrophytic Vegetation Indicators:	
4							Dominance Test is >50%	
5							Prevalence Index is <3.01	
6							Problematic Hydrophytic Vegetation ¹ (Explain)	'
7							1	
				20	= Total Cove	er	Indicators of hydric soil and wetland hydrology must	
Herb Stra		(Plot size:)				be present, unless distrubed or problematic.	
1. <u>S</u>	Solidago ar	guta		10	N	FACU	Definitions of Vegetation Strata:	
2								
3							Tree - Woody plants, excluding woody vines,	
4							approximately 20 ft (6 m) or more in height and 3 in.	
5							(7.6 cm) or larger in diameter at breast height (DBH).	
6.								
7							Sapling - Woody plants, excluding woody vines,	
8							approximately 20 ft (6 m) or more in height and less	
9.							than 3 in. (7.6 cm) DBH.	
10								
11							Shrub - Woody plants, excluding woody vines,	
12.							approximately 3 to 20 ft (1 to 6 m) in height.	
				10	= Total Cove	er		
Woody V	ine Statum	(Plot size:)				Herb - All herbaceous (non-woody) plants, including	
1. C	Clematis pi	tcheri		30	Υ	FACU	herbaceous vines, regardless of size. Includes woody	,
2.							plants, except woody vines, less than approximately	
3.							3 ft (1 m) in height.	
4.								
5.							Woody vine - All woody vines, regardless of height.	
				30	= Total Cove	er		
Remarks	: (If observed	d, list morphological	adaptatio				1	
	,		,	/-			Hydrophatic	
							Vegetation	
							Present? Yes Y No	

SOIL Sampling Point: 7

Depth	otioni. (Describe to	o the depth h	leeaea to aocume	it the maic	ator or conti	m the abser	nce of indicators.)	
Debili	Matr	ix		Redox Fe	atures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20	Spoil	100						
							· · · · · · · · · · · · · · · · · · ·	
¹ Type: C=Cond	centration, D=Depl	etion, RM=Re	educed Matrix, CS=	Covered or	Coated Sand	Grains.	² Location: PL=Pore	Lining, M=Matrix
Hydric Soil	Indicators:					Indicators f	or Problematic Hyd	ric Soils ³ :
Historol (A	A-1)		Polyvalue Be	low Surface (88) (LRR S, T,	J)	1 cm Muck (A9	(LRR O)
Histic Epip	pedon (A2)		Thin Dark Su	rface (S9) (LF	R S, T, U)		2 cm Muck (A1	0) (LRR S)
Black Histi	ic (A3)		Loamy Muck	/ Mineral (F1)	(LRR O)		Reduced Vertic	(F18) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)		Loamy Gleye	d Matric (F2)			Piedmont Floor	Iplain Soils (F19) (LRR P, S, T)
Stratified L	_ayers (A5)		X Depleted Ma	rix (F3)			Anomalous Brig	tht Loamy Soils (F(20)
Organic B	odies (A6) (LRR P, T,	U)	Redox Dark	Surface (F6)			(MLRA 153B)	
5 cm Mucl	ky Mineral (A7) (LRR	P, T, U)	Depleted Dar	k Surface (F7)		Red Parent Ma	terial (TF2)
Muck Pres	sence (A8) (LRR U)		Redox Depre	ssions (F8)			Very Shallow D	ark Surface (TF-12) (LRR T, U)
1 cm Mucl	k (A9) (LRR P, T)		Marl (F10) (L	RR U)			Other (Explain	n Remarks)
Depleted E	Below Dark Surface (A	A11)	Depleted Och	nric (F11) (ML	RA 151)			
Thick Dark	Surface (A12)		Iron-Mangan	ese Masses (12) (LRR O, P	T)	³ Indicators of h	drophytic vegetation and
Coast Prai	irie Redox (A16) (MLF	RA 150A)	Umbric Surfa	ce (F13) (LRF	P, T, U)		wetland hydrolo	ogy must be present,
Sandy Mu	cky Mineral (S1) (LRF	R O, S)	Delta Ochric	(F17) (MLRA	151)		unless disturbe	d or problematic.
Sandy Gle	eyed Matrix (S4)		Reduced Ver	tic (F18) (MLI	A 150A, 150B)		
	dox (S5)		Piedmont Flo	odplain Soils	(F19) <u>(MLRA 1</u> 4	9A)		
Sandy Red	aox (oo)				oile (F20) (MLF	A 149A, 153C,	153D)	
Sandy Red Stripped M			Anomalous B	right Loamy S	10113 (1 20) (IVILI			
Stripped M		S, T, U)	Anomalous E	right Loamy \$	10113 (1 20) <u>(IVILI</u>			
Stripped M Dark Sur	Matrix (S6) face (S7) (LRR P,	S, T, U)	Anomalous B	right Loamy \$	1 20) (1 1 20)			
Stripped M Dark Sur	Matrix (S6)	S, T, U)	Anomalous B	right Loamy \$	0113 (1 20) <u>(WILT</u>			No
Stripped M Dark Sur Restrictive Lay Type:	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy §	Olis (1 20) <u>(WL.)</u>	Hydric Soil	Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type:	Matrix (S6) face (S7) (LRR P,		Anomalous B	right Loamy S	013 (1 20) <u>(1916)</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy §	013 (1 20) <u>1141-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1141-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1141-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	0113 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1141-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	013 (1 20) <u>1101-1</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type:	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No
Stripped M Dark Sur Restrictive Lay Type: Depth (Ir	Matrix (S6) fface (S7) (LRR P, yer (If observed):		Anomalous B	right Loamy \$	OIIS (1 20) <u>IIVILI</u>		Present? Yes	No

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: S	Star Lake Canal S	Superfund	Site / Jeffers	on Canal	City/County:	Port N	leches / .	lefferson	Samplin	ng Date:	04	/09/09)
_	Chevron Env				_		St	ate: TX	- Samplir	ng Point:		8	
Investigator(s):	Brandon L. C	wens / N	Matt D. B	rown	Section, Townsh	nip, Range	:		•	_			
Landform (hillslope,	terrace, etc.):	Drair	age Bas	n	Local relief (con	cave, conv	ex, none):	Slope	!		Slope	e (%):	2
Subregion (LRR or N	ILRA): LR	R T	L	at: N 29°	° 57' 56.78"		Long: W	93° 55' 04.3	1"	Datum:	W	/GS84	
Soil Map Unit Name:	Franea	u clay, () to 1 % s	lopes,	occassionally	flooded		NWI Clas	sification:	Partially h	ydric		
Are climate/hydrolog	ic condtions on	the site ty	pical for thi	s time of	year?	Yes	X N	lo	(If no, exp	lain in Rer	marks)		
Are Vegetation	N Soil N	or Hyd	Irology 1	l signifi	cantly disturbed?	Are "I	Normal Circ	cumstances	present?	Yes	Χ	No	
Are Vegetation	N Soil	or Hyd	Irology 1	l natura	ally problematic?	(If n	needed, exp	olain any an	swers in R	emarks.)			
SUMMARY OF I	FINDINGS -	Attach s	site map	showir	ng sampling p	oint loc	ations, t	ransects	importa	ınt featı	ıres, e	etc.	
Hydrophytic Vegetat	on Present?	Yes	X N	0	_								
Hydric Soil Present?		Yes	NA N	o	Is the Sampled	Area	Υ	es X	No				
Wetland Hydrology F	Present?	Yes	<u>X</u> N	o	within a Wetlar	ıd?							
Remarks:													
4"+ = 100% Spo	il												
•													
HYDROLOGY													
Wetland Hydrology	Indicators						Sec	ondary Indi	cators (min	imum of to	wo requ	ired)	
Primary Indicators (n	ninimum of one	is required	d; check all	that appl	y)	_		Surface	Soil Cracks	(B6)			
Surface Water	(A1)		X Water-Stained Leaved (B9)					Sparsely Vegetated Concave Surface (B8)					
High Water Ta	ble (A2)		Aquatic Fauna (B13)					Drainag	e Patterns (E	310)			
Saturation (A3)		Marl Deposits (B15) (LRR U)					Moss Tr	im Lines (B1	6)			
X Water Marks (I	31)		Нус	Irogen Sulf	fide Odor (C1)			Dry-Sea	son Water T	able (C2)			
Sediment Dep	osits (B2)		Oxi	dized Rhiz	ospheres on Living F	Roots (C3)		Crayfish	Burrows (C	8)			
Drift Deposits	B3)		Pre	sence of R	Reduced Iron (C4)			Saturati	on Visible or	Aerial Imaç	gery (C9))	
Algal Mat or C	rust (B4)		Red	ent Iron R	eduction in Tilled So	ils (c6)	Geomorphic Position (D2)						
Iron Deposits (B5)		Thin Muck Surface (C7)					Shallow Aquitard (D3					
Inundation Vision	ble on Aerial Imaç	jery (B7)	Oth	er (Explair	n in Remarks)		X FAC-Neutral Test (D5)						
Field Observations	 :												
Surface Water Prese	ent? Ye	es	No >	(Depth (inches	;)							
Water Table Present	? Ye	es	No >	(Depth (inches	;)	Wetland F	lydrology F	resent?	Yes	X	No	
Saturation Present?	Ye	es	No >	(Depth (inches	;)				_			
(includes capillary fri	nge)												
Describe Recorded I	Data (stream ga	uge, moni	toring well,	aerial ph	otos, previous ins	pections),	if available:						
Remarks:													

Sampling Point	8	

Francis Objections (Distriction	Absolute		Indicator	Barria and Tart worder and
Free Stratum (Plot size:) % Cove		Status	Dominance Test worksheet:
1. Salix nigra	30	_ <u>Y</u>	FACW+	Number of Dominant Species
2. Fraxinus pennsylvanica	15	N	FACW	That Are OBL, FACW, or FAC: (A)
3. Celtis occidentalis	15	N	FAC	
4. Cornus drummondii	5	N	FAC	Total Number of Dominant
5				Species Across All Strata: (B)
6.				
7.				Precent of Dominant Species
	65	= Total Cov	/er	That Are OBL, FACW, or FAC: (A/B
Sapling Stratum (Plot size:)	_		
Toxicodendron vernix	25	V	OBL	Prevalence Index worksheet:
Cornus drummondii	<u></u>	_ <u>'</u>	FAC	· [
			TAC	·
3.				OBL species x1 =
4		_		FACW species x2 =
5				FAC species x3 =
6				FACU species x4 =
7				UPL species x5 =
	40	= Total Cov	/er	Column Totals: (A) (B)
Shrub Statum (Plot size:)	_		
1. Morus rubra	20	Υ	FACU	Prevalence Index = B/A =
2. Ilex vomitoria	10	_ <u>·</u> Y	FAC-	
3.			1710	Hydrophytic Vegetation Indicators:
		_	_	Dominance Test is >50%
4.				·
5		_		Prevalence Index is <3.01
6				Problematic Hydrophytic Vegetation ¹ (Explain)
7				
	30	= Total Cov	⁄er	¹ Indicators of hydric soil and wetland hydrology must
Herb Stratum (Plot size:)			be present, unless distrubed or problematic.
1. Rubus trivialis	20	Υ	FAC	Definitions of Vegetation Strata:
2. Hibiscus moscheutos	20		OBL	
3. Juncus effusus	10	N	OBL	Tree - Woody plants, excluding woody vines,
4. Hydrocotyle umbellata	10	_ <u> </u>	OBL	approximately 20 ft (6 m) or more in height and 3 in.
			ODL	
5.				(7.6 cm) or larger in diameter at breast height (DBH).
6		_		
7				Sapling - Woody plants, excluding woody vines,
8				approximately 20 ft (6 m) or more in height and less
9				than 3 in. (7.6 cm) DBH.
10.				
11.				Shrub - Woody plants, excluding woody vines,
12.		_		approximately 3 to 20 ft (1 to 6 m) in height.
	60	= Total Cov	/er	
Noody Vine Statum (Plot size:)	= 10161 001	01	Herb - All herbaceous (non-woody) plants, including
	30		FACU	• •
1. Clematis pitcheri				herbaceous vines, regardless of size. Includes woody
2. Toxicodendron radicans	15	Y	FAC	plants, except woody vines, less than approximately
3				3 ft (1 m) in height.
4				
5.				Woody vine - All woody vines, regardless of height.
	45	= Total Cov	/er	
Remarks: (If observed, list morphological	adaptations below).		
. (,	•		Hydrophatic
				Vegetation
				_
				Present? Yes Y No
				<u> </u>

SOIL

Sampling Point:

8

inches)	Mate Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10 YR 3/1	80	00101 (1110131)	70	1,700		TOXIGIO	20% Spoil
4"+	Spoil	90						2070 Opon
	Орон	30						
								
				-				
				-				
ne: C-Con	centration D-Denl	etion RM-R	educed Matrix, CS=	Covered or	Coated Sand	Grains	² Location: PL=Pore	Lining M-Matrix
	Indicators:	Ction, rawi–ra	caacca Matrix, OO-	OOVERED OF	Coalca Garia		for Problematic Hyd	
Historol (Polyvalue Re	Now Surface (S8) (LRR S, T,		1 cm Muck (A9)	
	pedon (A2)			ırface (S9) (L I		5,	2 cm Muck (A10	
				y Mineral (F1)				(F18) (outside MLRA 150A,B)
Black His					-			
	Sulfide (A4)			ed Matric (F2)				plain Soils (F19) (LRR P, S, T)
	Layers (A5)	110	Depleted Ma					ht Loamy Soils (F(20)
	Sodies (A6) (LRR P, T,		Redox Dark		-\		(MLRA 153B)	(750)
	ky Mineral (A7) (LRR	P, I, U)		rk Surface (F7	')		Red Parent Mat	, ,
	sence (A8) (LRR U)		Redox Depre	` '				ark Surface (TF-12) (LRR T, U)
	k (A9) (LRR P, T)		Marl (F10) (L				Other (Explain i	n Remarks)
	Below Dark Surface (A	A11)		hric (F11) (ML	=	- '	31	
_	k Surface (A12)				F12) (LRR O, P	1)	-	drophytic vegetation and
	irie Redox (A16) (MLF	•		ace (F13) (LRI			-	gy must be present,
	ıcky Mineral (S1) (LRF	R O, S)		(F17) (MLRA	-		unless disturbed	d or problematic.
	eyed Matrix (S4)				RA 150A, 150B			
Sandy Re	dox (S5)				(F19) (MLRA 1			
	Matrix (S6)		Anomalous E	Bright Loamy	Soils (F20) (MLF	RA 149A, 153C,	<u>153D)</u>	
Dark Su	rface (S7) (LRR P,	S, T, U)						
						1		
	yer (If observed):						- V	NI -
Type:			_			Hydric Soil	Present? Yes	No
Depth (I	nches):							
emarks:								

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Star Lake Ca	nal Superfund	Site / Jeffe	rson Canal	City/County:	Port N	leches / Je	ferson	Sampli	ng Date:	04/09/	09
- ·		nvironmen			_		State	e: TX	Sampli	ing Point:	9	
Investigator(s):	Brandon L	Owens / I	Matt D. E	Brown	Section, Townsh	ip, Range:	:			_		
Landform (hillslope,	terrace, etc.): Drair	nage Ba	sin	Local relief (cond	cave, conv	vex, none):	Slope			Slope (%): 2
Subregion (LRR or I	MLRA):	LRR T		Lat: N 29	° 57' 57.87"		Long: W 93	° 55' 05.19	9"	Datum:	WGS	34
Soil Map Unit Name	: Fra	neau clay, (0 to 1 %	slopes,	occassionally f	looded		NWI Class	sification:	Partially h	ydric	
Are climate/hydrolog	gic condtions	on the site ty	pical for th	is time of	year?	Yes	X No		(If no, ex	plain in Rer	marks)	
Are Vegetation	N Soil	N or Hyd	drology	N signifi	cantly disturbed?	Are "N	Normal Circur	nstances"	present?	Yes	X No	
Are Vegetation	N Soil	N or Hyd	drology	N natura	ally problematic?	(If n	needed, expla	in any ans	wers in R	emarks.)		
SUMMARY OF	FINDINGS	S - Attach	site map	showir	ng sampling p	oint loc	ations, tra	nsects,	import	ant featu	ıres, etc.	
Hydrophytic Vegetat	tion Present	? Yes		No X								
Hydric Soil Present?	?	Yes		No X	Is the Sampled	Area	Yes		No	X		
Wetland Hydrology	Present?	Yes		No X	within a Wetlan	d?						
Remarks:												
Dry												
HYDROLOGY												
Wetland Hydrology	y Indicators						Secon	dary Indic	ators (mi	nimum of t	wo required))
Primary Indicators (r	minimum of	one is require	d; check a	ll that appl	y)	_		Surface	Soil Cracks	; (B6)		
Surface Water	r (A1)		w	ater-Stained	d Leaved (B9)			Sparsely	Vegetated	Concave Su	urface (B8)	
High Water Ta	able (A2)		A	quatic Fauna	a (B13)			Drainage	Patterns (B10)		
Saturation (A3	3)		M	arl Deposits	(B15) (LRR U)			Moss Tri	m Lines (B	16)		
Water Marks ((B1)		H;	drogen Sul	fide Odor (C1)			Dry-Seas	son Water	Table (C2)		
Sediment Dep	oosits (B2)		0	xidized Rhiz	cospheres on Living R	loots (C3)		Crayfish	Burrows (C	28)		
Drift Deposits	(B3)		Pi	esence of F	Reduced Iron (C4)			Saturation	n Visible o	n Aerial Imaç	gery (C9)	
Algal Mat or C	Crust (B4)		R	ecent Iron R	eduction in Tilled Soi	Tilled Soils (c6) Geomorphic Position (D2)						
Iron Deposits	(B5)		TI	nin Muck Su	rface (C7)	(C7) Shallow Aquitard (D3						
Inundation Vis	sible on Aerial	Imagery (B7)	0	ther (Explair	n in Remarks)			FAC-Neu	ıtral Test (I) 5)		
Field Observations	 3:											
Surface Water Prese	ent?	Yes	No	X	Depth (inches))						
Water Table Presen	nt?	Yes	No	X	Depth (inches)		Wetland Hyd	drology P	resent?	Yes	No	Χ
Saturation Present?	,	Yes	No	X	Depth (inches)					_		
(includes capillary fr	ringe)	•										
Describe Recorded	Data (stream	n gauge, moni	toring wel	, aerial ph	otos, previous ins	pections), i	if available:					
Remarks:												
No indications o	of hydrolog	y present										

/EGETATION -	Use so	ientific	names	of	plants.
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	,	Absolute	Dominant	Indicator		
ee Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:	
Celtis occidentalis Sapium sebiferum		65	<u>Y</u>	FAC	Number of Dominant Species	
Sapium sebiferum		20	<u> </u>	FACU+	That Are OBL, FACW, or FAC:	(A)
					Total Number of Dominant	
					Species Across All Strata:	(B)
						(D
	<u> </u>				Precent of Dominant Species	
		85	= Total Cove		That Are OBL, FACW, or FAC:	(A
oling Stratum (Plot size:)		= 10tal 00V6	,1	matrice GBE, Friend, of Frie.	
					Prevalence Index worksheet:	
					Total % Cover of: Multiply by:	
					OBL species x1 =	
					FACW species x2 =	
					FAC species x3 =	
					FACU species x4 =	
					UPL species x5 =	
			= Total Cove	er	Column Totals: (A)	(B
ub Statum (Plot size: Ilex vomitoria		20	<u> </u>	FAC-	Prevalence Index = B/A =	
					Hydrophytic Vegetation Indicators:	
				-	Dominance Test is >50%	
					Prevalence Index is ≤3.0 ¹	
					Problematic Hydrophytic Vegetation ¹ (Explain	n)
-				-		-,
-		20	= Total Cove	er	¹ Indicators of hydric soil and wetland hydrology must	
b Stratum (Plot size:)				be present, unless distrubed or problematic.	
Rubus trivialis		25	Υ	FAC	Definitions of Vegetation Strata:	
Cyperus retrosus		20	Y	FAC		
Trifolium repens		20	Y	FACU+	Tree - Woody plants, excluding woody vines,	
Rubus argutus		10	N	FACU+	approximately 20 ft (6 m) or more in height and 3 in.	
					(7.6 cm) or larger in diameter at breast height (DBH)	
					Sapling - Woody plants, excluding woody vines,	
				-	approximately 20 ft (6 m) or more in height and less	
					than 3 in. (7.6 cm) DBH.	
					Shrub - Woody plants, excluding woody vines,	
		75	= Total Cove		approximately 3 to 20 ft (1 to 6 m) in height.	
ody Vine Statum (Plot size:)	13	= 10(a) 0006	71	Herb - All herbaceous (non-woody) plants, including	
Toxicodendron radicans		20	Y	FAC	herbaceous vines, regardless of size. Includes wood	dy
					plants, except woody vines, less than approximately	•
-					3 ft (1 m) in height.	
					, , , , , , , , , , , , , , , , , , , ,	
					Woody vine - All woody vines, regardless of height.	
		20	= Total Cove			

SOIL Sampling Point:

ydric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Redox (S5)	3/1 80 90 90 D=Depletion, RM= rs:	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surface	Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2)	² Location: PL=Pore L Itors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (I Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
pe: C=Concentration, D dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)	D=Depletion, RM= rs: RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	ining, M=Matrix c Soils ³ : LRR O) (LRR S) 518) (outside MLRA 150A,B)
pe: C=Concentration, D dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)	D=Depletion, RM= rs: RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
dric Soil Indicator Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Sc Sandy Gleyed Matrix (Sc Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Polyvalue Below S Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	Indica Surface (S8) (LRR S, T, U) e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2) F3)	tors for Problematic Hydric 1 cm Muck (A9) (L 2 cm Muck (A10) (Reduced Vertic (F Piedmont Floodpla	c Soils ³ : LRR 0) (LRR S) F18) (outside MLRA 150A,B)
Historol (A-1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S Sandy Redox (S5)	RR P, T, U) 7) (LRR P, T, U) RR U)	Thin Dark Surface Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	e (S9) (LRR S, T, U) neral (F1) (LRR O) atric (F2)	2 cm Muck (A10) Reduced Vertic (F	(LRR S)
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)	7) (LRR P, T, U) RR U)	Loamy Mucky Min Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	neral (F1) (LRR 0) atric (F2) F3)	Reduced Vertic (F	18) (outside MLRA 150A,B)
Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)	7) (LRR P, T, U) RR U)	Loamy Gleyed Ma Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	atric (F2) F3)	Piedmont Floodpla	
Stratified Layers (A5) Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P) Depleted Below Dark St Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S Sandy Redox (S5)	7) (LRR P, T, U) RR U)	Depleted Matrix (F Redox Dark Surfa Depleted Dark Su	F3)		. 0 1 /5:0 # 55 5 5
Organic Bodies (A6) (LR 5 cm Mucky Mineral (A7 Muck Presence (A8) (LR 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (Se Sandy Gleyed Matrix (Se Sandy Redox (S5)	7) (LRR P, T, U) RR U)	Redox Dark Surfa Depleted Dark Su		Anomalous Bright	ain Soils (F19) (LRR P, S, T)
5 cm Mucky Mineral (A7 Muck Presence (A8) (LF 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S Sandy Redox (S5)	7) (LRR P, T, U) RR U)	Depleted Dark Su	nce (F6)		t Loamy Soils (F(20)
Muck Presence (A8) (LR P 1 cm Muck (A9) (LRR P Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)	RR U)			(MLRA 153B)	
1 cm Muck (A9) (LRR P. Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)			ırface (F7)	Red Parent Mater	ial (TF2)
Depleted Below Dark Su Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (So Sandy Redox (S5)	P, T)	Redox Depression	ns (F8)	Very Shallow Dark	k Surface (TF-12) (LRR T, U)
Thick Dark Surface (A12 Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S- Sandy Redox (S5)		Marl (F10) (LRR U		Other (Explain in F	Remarks)
Coast Prairie Redox (A1 Sandy Mucky Mineral (S Sandy Gleyed Matrix (S Sandy Redox (S5)	surface (A11)	Depleted Ochric (F11) (MLRA 151)		
Sandy Mucky Mineral (S Sandy Gleyed Matrix (So Sandy Redox (S5)	2)	Iron-Manganese N	Masses (F12) (LRR O, P, T)	³ Indicators of hydr	rophytic vegetation and
Sandy Gleyed Matrix (S-Sandy Redox (S5)	16) (MLRA 150A)	Umbric Surface (F	F13) (LRR P, T, U)	wetland hydrology	must be present,
Sandy Redox (S5)	S1) (LRR O, S)	Delta Ochric (F17)) (MLRA 151)	unless disturbed of	or problematic.
	64)	Reduced Vertic (F	⁻ 18) (MLRA 150A, 150B)		
		Piedmont Floodpla	ain Soils (F19) (MLRA 149A)		
Stripped Matrix (S6)		Anomalous Bright	t Loamy Soils (F20) (MLRA 149A,	153C, 153D)	
Dark Surface (S7) (L	LRR P, S, T, U)				
strictive Layer (If obser	erved):				
Type:		<u> </u>	Hydric	Soil Present? Yes _	_ No <u>_X_</u>
Depth (Inches):		_			
marks:					

APPENDIX B

APPROVED JURISDICTIONAL DETERMINATION FORM

APPROVED JURISDICTIONAL DETERMINATION FORM U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I.	BACKGROUND	INFORMATION
DECTION I.	DACINOUND	

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

В.	DISTRICT OFFICE, FILE NAME, AND NUMBER:
C.	PROJECT LOCATION AND BACKGROUND INFORMATION: State: Texas County/parish/borough: Jefferson City: Port Neches Center coordinates of site (lat/long in degree decimal format): Lat. 29.9652° N, Long. 93.9182° W. Universal Transverse Mercator: WGS84 Name of nearest waterbody: Jefferson Canal
	Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Star Lake Canal Name of watershed or Hydrologic Unit Code (HUC): 12020003 Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request. Check if other sites (e.g., offsite mitigation sites, disposal sites, etc) are associated with this action and are recorded on a different JD form.
D.	REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY): ☐ Office (Desk) Determination. Date: Field Determination. Date(s): 3/8-9/2009
SEC A.	CTION II: SUMMARY OF FINDINGS RHA SECTION 10 DETERMINATION OF JURISDICTION.
	re Pick List "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the lew area. [Required] Waters subject to the ebb and flow of the tide. Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce Explain:
В.	CWA SECTION 404 DETERMINATION OF JURISDICTION.
The	ere Are "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]
	1. Waters of the U.S. a. Indicate presence of waters of U.S. in review area (check all that apply): TNWs, including territorial seas Wetlands adjacent to TNWs Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs Non-RPWs that flow directly or indirectly into TNWs Wetlands directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs Impoundments of jurisdictional waters Isolated (interstate or intrastate) waters, including isolated wetlands

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual

b. Identify (estimate) size of waters of the U.S. in the review area: Non-wetland waters: 1150 linear feet: 6 width (ft) and/or acr

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

Wetlands: NA acres.

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1.	TNW Identify TNW:	
	Summarize rationale supporting determination: .	
2.	Wetland adjacent to TNW Summarize rationale supporting conclusion that wetland is "adjacent":	

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: Pick List Drainage area: **Pick List** Average annual rainfall: inches Average annual snowfall: inches (ii) Physical Characteristics: (a) Relationship with TNW: Tributary flows directly into TNW. Tributary flows through **Pick List** tributaries before entering TNW. Project waters are **Pick List** river miles from TNW. Project waters are **Pick List** river miles from RPW. Project waters are **Pick List** aerial (straight) miles from TNW. Project waters are **Pick List** aerial (straight) miles from RPW. Project waters cross or serve as state boundaries. Explain: Identify flow route to TNW⁵: Tributary stream order, if known:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b)	General Tributary Characteristics (check all that apply): Tributary is: Natural Artificial (man-made). Explain: Manipulated (man-altered). Explain:
	Tributary properties with respect to top of bank (estimate): Average width: feet Average depth: feet Average side slopes: Pick List.
	Primary tributary substrate composition (check all that apply): Silts Sands Concrete Cobbles Gravel Muck Bedrock Vegetation. Type/% cover: Other. Explain:
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Presence of run/riffle/pool complexes. Explain: Tributary geometry: Pick List Tributary gradient (approximate average slope): %
(c)	Flow: Tributary provides for: Pick List Estimate average number of flow events in review area/year: Pick List Describe flow regime: Other information on duration and volume:
	Surface flow is: Pick List. Characteristics: .
	Subsurface flow: Pick List. Explain findings: Dye (or other) test performed:
	Tributary has (check all that apply): Bed and banks OHWM ⁶ (check all indicators that apply): clear, natural line impressed on the bank changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining other (list): Tributary has (check all that apply): the presence of litter and debris destruction of terrestrial vegetation the presence of wrack line sediment sorting sediment sorting scour multiple observed or predicted flow events abrupt change in plant community
	Discontinuous OHWM. ⁷ Explain: .
	If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply): High Tide Line indicated by: oil or scum line along shore objects fine shell or debris deposits (foreshore) physical markings/characteristics tidal gauges other (list): Mean High Water Mark indicated by: survey to available datum; physical markings; vegetation lines/changes in vegetation types.
Cha	emical Characteristics: racterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: tify specific pollutants, if known:

(iii)

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

	(iv)	Biological Characteristics. Channel supports (check all that apply): Riparian corridor. Characteristics (type, average width): Wetland fringe. Characteristics: Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
2.	Cha	acteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW
	(i)	Physical Characteristics: (a) General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
		(b) <u>General Flow Relationship with Non-TNW</u> : Flow is: Pick List . Explain:
		Surface flow is: Pick List Characteristics:
		Subsurface flow: Pick List. Explain findings:
		(c) Wetland Adjacency Determination with Non-TNW: ☐ Directly abutting ☐ Not directly abutting ☐ Discrete wetland hydrologic connection. Explain: ☐ Ecological connection. Explain: ☐ Separated by berm/barrier. Explain:
		Proximity (Relationship) to TNW Project wetlands are Pick List river miles from TNW. Project waters are Pick List aerial (straight) miles from TNW. Flow is from: Pick List. Estimate approximate location of wetland as within the Pick List floodplain.
	(ii)	Chemical Characteristics: Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Identify specific pollutants, if known:
	(iii)	Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): Vegetation type/percent cover. Explain: Habitat for: Federally Listed species. Explain findings: Fish/spawn areas. Explain findings: Other environmentally-sensitive species. Explain findings: Aquatic/wildlife diversity. Explain findings:
3.	Cha	racteristics of all wetlands adjacent to the tributary (if any) All wetland(s) being considered in the cumulative analysis: Pick List Approximately () acres in total are being considered in the cumulative analysis.

Directly abuts? (Y/N) Size (in acres) Directly abuts? (Y/N) Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- 2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1.	TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area: TNWs: linear feet width (ft), Or, acres. Wetlands adjacent to TNWs: acres.
2.	RPWs that flow directly or indirectly into TNWs. Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: 1150 linear feet 6width (ft). Other non-wetland waters: acres. Identify type(s) of waters: .
3.	Non-RPWs ⁸ that flow directly or indirectly into TNWs. Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional waters within the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters:
4.	Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands. Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	■ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
5.	Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs. Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.
	Provide acreage estimates for jurisdictional wetlands in the review area: acres.
6.	Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs. Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.
	Provide estimates for jurisdictional wetlands in the review area: acres.
7.	Impoundments of jurisdictional waters. As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional. Demonstrate that impoundment was created from "waters of the U.S.," or Demonstrate that water meets the criteria for one of the categories presented above (1-6), or Demonstrate that water is isolated with a nexus to commerce (see E below).
SU	DLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, GRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY CH WATERS (CHECK ALL THAT APPLY): 10 which are or could be used by interstate or foreign travelers for recreational or other purposes. from which fish or shellfish are or could be taken and sold in interstate or foreign commerce. which are or could be used for industrial purposes by industries in interstate commerce. Interstate isolated waters. Explain: Other factors. Explain:
Ide	entify water body and summarize rationale supporting determination:

E.

 ⁸See Footnote # 3.
 ⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
 ¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: . Wetlands: acres.
F.	NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY): If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements. Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce. Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR). Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: Other: (explain, if not covered above):
	Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: . Wetlands: acres.
	Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet, width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic resource: . Wetlands: acres.
SEC	CTION IV: DATA SOURCES.
A.	SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below): Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Data sheets prepared/submitted by or on behalf of the applicant/consultant. Office concurs with data sheets/delineation report. Office does not concur with data sheets/delineation report. Data sheets prepared by the Corps: Corps navigable waters' study: U.S. Geological Survey Hydrologic Atlas: USGS NHD data. USGS 8 and 12 digit HUC maps. U.S. Geological Survey map(s). Cite scale & quad name: USDA Natural Resources Conservation Service Soil Survey. Citation: National wetlands inventory map(s). Cite name: figure 3 - National Wetlands Inventory Map. State/Local wetland inventory map(s): FEMA/FIRM maps: 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929) Photographs: Aerial (Name & Date): or Other (Name & Date):
	Previous determination(s). File no. and date of response letter: Applicable/supporting case law: Applicable/supporting scientific literature: Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPENDIX C

SITE PHOTOGRAPHS



PHOTOGRAPH 1: View of sample location 2 (looking north).



PHOTOGRAPH 2: View of sample location 3 (looking south).



PHOTOGRAPH 3: View of soil sample pit at sample location 3.



PHOTOGRAPH 4: View of sample location 4 (looking north).



PHOTOGRAPH 5: View of sample location 5 (looking south).



PHOTOGRAPH 6: View of sample location 6 (looking north).



PHOTOGRAPH 7: View of sample location 7 (looking east).



PHOTOGRAPH 8: View of sample location 8 (looking north).



PHOTOGRAPH 9: View of sample location 9 (looking west).